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A SOCIO-ECONOMIC STUDY OF VOCATIONAL-TECHNICAL EDUCATION STUDENTS

CHAPTER I

INTRODUCTION

Education is a duality. It is both consumption and investment, consumption in the sense that individuals desire it for their own aesthetic fulfillment, and investment in the sense that individuals desire it as a means of preparing themselves for an economically productive life. For different people, education encompasses various meanings, purposes, and objectives. It is impossible to completely divorce one form of education from another form although one form of education may prepare an individual to achieve certain purposes and objectives more readily than other forms of education.

Traditionally, our formal educational system has not attempted to equip a large number of students with specific usable skills which are salable in the labor markets. The emphasis in secondary schools has primarily been to give the student a rounded general education in preparation for college. As a consequence, most workers have acquired whatever skills they possess in a rather haphazard manner. As long as

unskilled workers were in great demand, youngsters could find a place in the "world of work." However, the current labor market is far more complex and is increasingly demanding some minimum level of skill for entry into an occupation. Because of this, the absence of appropriate vocational and technical education and training takes on great significance. The traditional practice of allowing skills to be developed through experience has steadily become more troublesome, costly, and wasteful from the standpoint of the individual, the industry in question, the economy, and society.

In the past we have paid too little attention to the two out of three youths who do not go on to college and the many others who do not finish college.[1] There should be as much concern about assisting them in their transition from school to work as there is about preparing others for college. However, our society has not yet established a satisfactory way to bridge the gap between school and work. Other countries have developed broad programs of industrial training and apprenticeship to specifically prepare young people to enter a trade or profession. Recently, there has developed a growing awareness that the absence of suitable vocational and technical education is a major cause of school dropouts. Inadequate vocational-technical preparation contributes to

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[1]United States Department of Labor, Manpower Report of the President and A Report on Manpower Requirements, Resources, Utilization, and Training (Washington: U.S. Government Printing Office, 1967), p. xiv.

youth unemployment and skill shortages in our economy. The development of an adequate vocational technical education and training system is therefore a prerequisite to solving these problems. How to provide such a system as an integral part of the total education system and to avoid dead-end tracks for those who desire vocational-technical occupations constitutes one of the major challenges of education today.

Vocational and technical education and training exists in many forms. There is no fine line of demarcation between vocational and technical education. However, vocational education is oriented towards the skilled crafts and trades, whereas, technical education is oriented more towards the sciences and engineering. Likewise, training and education are overlapping and, at times, indistinguishable. Education, though, is thought to be more formal in nature and training, less formal in that it involves work experiences and internships.

Comprehensive programs for vocational and technical education need to be developed on both the secondary and the post-secondary levels. High schools cannot be expected to prepare individuals fully with all the skills and knowledge required for all occupations, but they can provide an introduction to many broad fields of study. The inadequacies of existing programs of vocational-technical education and training can be attributed mainly to limited choices and programs available to students or the failure to adapt the

programs to changing needs of the economy and society.

Concurrent with the increasing needs for preparation in vocational-technical education at the secondary level, there is a very sharp increase in the need for vocational-technical education of one to three years beyond the high school and for part-time occupational training of adults on this level also. Perhaps this is the most underdeveloped phase of public education in America today. It is a relatively new phase of education which has been given dramatic attention recently by nationwide developments.

Purpose and Scope

Recently, Oklahoma, like many other states, is witnessing an upsurge of the interest in the problems and needs of post-secondary vocational-technical education and the importance of sound, state-wide planning in an attempt to set up programs to meet these needs. Legislators, educators, and the public are all recognizing the need for systematic study of these problems to obtain data which is essential to both short-run and long-run planning. This growing awareness of the importance of such studies is indicated by the fact that there are now in progress various independent, non-related studies currently underway in Oklahoma to study and review various aspects and facets of the vocational-technical education problem.

The thesis of this particular study is that there is

a general lack of knowledge and information on the personal, social, academic, and economic characteristics of post-secondary vocational-technical education graduates and drop-outs. Necessary to the further economic development of the state of Oklahoma is the building up of a pool of well-trained workers in the skilled crafts and technical occupations. The basic purpose then of this study is to attempt to isolate certain socio-economic and academic characteristics of vocational and technical post-secondary education graduates and dropouts which should enable these students to be more effectively counseled, trained, developed, and used. Much more concrete information is needed as to why people seek certain occupational training, why they dropout of training or are able to graduate, how their training qualifies them for their vocation, how they seek employment in the job market, and other important facets of the total manpower problem as it relates to the vocational and technical occupations.

Most of the vocational-technical education research done to the present time has been concerned with agricultural and home economics education while relatively less has been done on trade and technical education and training. Some studies have been undertaken to provide more information on the nature and effect of vocational and technical education and training, but most of these projects have been limited to certain aspects of this type of training and education or only related indirectly to post-secondary vocational-technical education and training.

The studies by Holland have examined why people seek employment in certain occupations.[2] Crites has evaluated the relationship between motives and interests.[3] The success of vocational trade dropouts has been considered by Bowser.[4] The costs and benefits of training in a two-year technical institute have been researched by Carroll and Ihnen.[5] Several studies by the Department of Health, Education, and Welfare have considered the early employment experience of post-secondary technical school graduates.[6] The work by Super has led to a more plausible theory of vocational development.[7] And the findings of Strong have contributed much to vocational

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[2]John L. Holland, "A Theory of Vocational Choices," Vocational Guidance Quarterly, XII, No. 1 (August, 1963).

[3]John Crites, "Vocational Interest in Relation to Vocational Motivation," Journal of Educational Psychology, LIV, No. 5 (October, 1963).

[4]John A. Bowser, "Curriculum and Other Implications Resulting From a Study of the Graduates and Dropouts of Terminal Vocational-Industrial Education Programs at the Norfolk Division of Virginia State College, 1950-1954," Pennsylvania State University, 1960.

[5]Adger B. Carroll and Loren A. Ihnen, "Costs and Benefits of Training in a Technical Institute," U.S. Department of Labor, Manpower-Automation Research Notice, Contract Number 81-32-11, 1966, pp. 1-2.

[6]U. S. Department of Health, Education, and Welfare, Office of Education, "Follow-up Study of 1959 Graduates of Trade and Industrial Programs," (Washington: The Department, 1960), and also see U.S. Department of Health, Education, and Welfare, Office of Education, "The Placement of Graduates From Technical Education Preparatory Programs," (Washington: The Department, 1963).

[7]Donald E. Super, Vocational Development: A Framework for Research (New York: American Book-Stratford Press, Inc., 1957).

to vocational guidance.[8]

A considerable amount of research has been done on analyzing the personal, social, academic, and economic characteristics of high school students, college students, trainees under the Manpower Development and Training Act, and other groups, while relatively less has been done in the area of analyzing post-secondary vocational-technical school students. It is hoped that this study will provide a broader and deeper analysis of various facets of post-secondary education in the vocational-technical field.

Description of Research Activities

This project studies the students of Oklahoma State Tech (the Vocational-Technical Branch of Oklahoma State University, Stillwater, Oklahoma) at Okmulgee, Oklahoma. The school provides training in skilled crafts and technical occupations. The courses of instruction at Oklahoma State Tech are set up along eleven principal divisions: automotive, building, commerce, diesel, drafting, electronics and electricity, foods, general education, graphic arts, refrigeration and air conditioning, and small business. Currently there are more than 2,000 full-time students enrolled in more than 40 specialized courses of instruction. The school year has three semesters of sixteen weeks each. Courses vary in length according to course requirements.

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[8]Edward K. Strong, Jr., Vocational Interests of Men and Women (Stanford: Stanford University Press, 1943).

Two groups of students will be analyzed in this study. One group consists of those students who graduated from Oklahoma State Tech at the end of the tri-semester which ended on August 12, 1966. They will be called "graduates." The second group consists of those students who dropped out during that tri-semester or who failed to enroll in the following tri-semester if they did not graduate. They will be called "dropouts." The population of the graduating class consisted of a total of 210 students, and the population of the dropouts of this tri-semester included 223 students.

Developing the Questionnaire

Two basic questionnaires were used in this study. One was given to the graduates immediately before their graduation from Oklahoma State Tech. Six months after their graduation, a follow-up questionnaire was sent to them. A tentative questionnaire which was to be given to the graduates before their graduation was devised. It was then given to several students who were to graduate and also to several people who had already graduated from Oklahoma State Tech. After giving it to these people, some minor changes were made in it. The revised questionnaire consisted of three main parts.[9] The first part was to be filled out by all graduating students, the second part was to be filled out by all those who had jobs lined up at graduation time, and the third part was to be filled out by all those who did not have jobs at graduation

[9] A copy of this questionnaire can be found in Appendix A.

time. This questionnaire was rather detailed and extensive. However, it was felt that since all of the graduating students were still on campus and could be gotten together at a specified time for a certain length of time it would be possible to get them to completely and thoroughly fill out this questionnaire.

The follow-up questionnaire for the graduates was based to a great extent on the original questionnaire. The purpose of the follow-up questionnaire was to determine, among other things, whether their job expectations had been realized. To insure a greater response, it was designed to be brief and concise. It was given to a number of students who had graduated on August 12, 1967, and also to a number of students who had graduated prior to the August 12, 1967, tri-semester. Based on how they filled it out and on their responses, it was modified slightly. The modified follow-up questionnaire was sent out to the graduates on February 12, 1967, six months after their graduation from Oklahoma State Tech.[10]

The mail follow-up questionnaire was used for several reasons. It was relatively inexpensive. Because of cost and time limitations, it would have been impractical to personally interview all 210 graduates individually. The mail questionnaire was also convenient. The respondent could fill it out and return it at his own convenience. It was felt that the mail questionnaire would obtain confidential information more readily than other alternative possibilities.

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[10]A copy of this questionnaire can be found in Appendix B.

There were also certain limitations to a mail questionnaire. It is possible that certain questions might not be understood properly. In addition, the number of replies could be too small or the questionnaire might not be filled out properly or completely. This is a problem especially when the number of questionnaires sent is small.

With both questionnaires, the original and the follow-up, confidentiality was fully guaranteed. A cover letter with the original questionnaire emphasized this fact.[11] In addition, an oral assurance of this fact was also made when the respondents received the questionnaire. A cover letter was also included with the follow-up questionnaire when it was sent out reassuring the confidentiality of the information.[12] Assurances were made that the information received would be used in collective form only, and that data on specific individuals would not be published or released in any manner.

In addition to the information received on the graduates via the questionnaires, data were also secured from the Registrar's Office of Oklahoma State Tech. The Registrar's Office maintains a personal file on each student. This file contains grades, a rating inventory of psychological characteristics, and other related personal data. A worksheet

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[11] A copy of this letter can be found in Appendix A.

[12] A copy of this letter can be found in Appendix B.

was prepared whereby the desired data needed on the graduates could be easily secured from the student's personal file.[13]

The sole source of information on the dropout was the student's file. For the dropouts, a separate and more detailed worksheet was prepared because most of the comparable information desired on the graduates had been secured on the original questionnaire.[14] No attempt was made to secure information from the dropouts via mail questionnaires because it was thought that the returns from them might be biased because of the basic nature and characteristics of dropouts.

Collection and Processing of Data

The original questionnaire for the graduates was given to them on August 10, 1966. The Director of Oklahoma State Tech, Mr. Wayne W. Miller, requested that the students who were to graduate on August 12, 1966, be present for a certain length of time at a designated time and place. A total of 187 students were present to fill out this first questionnaire. Before they were asked to fill out this questionnaire, the Director spoke for a few minutes explaining the nature and emphasizing the importance of this study. He encouraged them to fill out the questionnaire as thoroughly and completely as possible. He also requested that they return a follow-up questionnaire which was to be sent to

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[13] A copy of this worksheet can be found in Appendix C.

[14] A copy of this worksheet can be found in Appendix D.

them six months later. The completion results of this questionnaire were good. This was due, to a great degree, to the cooperative mood that was instilled in them by the Director in his introductory remarks.

On February 12, 1967, six months after their graduation, these students received the follow-up questionnaire. To insure a greater response, a second reminder and second follow-up were sent three weeks later to those who had not returned the follow-up questionnaire. Respondents were given until April 12, 1967, to return the questionnaire, and after that time any returned questionnaires were not considered. A total of 153 follow-up questionnaires were received. This is 72 per cent of the graduating class and 82 per cent of those who completed the first questionnaire.

During this time, the information from the Registrar's Office was being collected. Three separate data sources on the graduates resulted from the above procedures for those who responded to all the questionnaires. These three data sources were: the original questionnaire given to the graduates immediately before graduation, the follow-up questionnaire sent to the graduates six months after graduation, and the information from the Registrar's Office. These data sources were matched by student. They were then coded onto master key-punch worksheets.[15] The data from the Registrar's Office

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[15]A copy of this key-punch worksheet can be found in Appendix E.

on the dropouts were transferred originally to a key-punch worksheet. The data on the graduates and the dropouts were punched on electronic data processing cards. To insure accuracy, the cards were verified against their original sources. A computer program was set up to tabulate the data. The computer run was made on the data and the empirical tabulations and statistical analysis followed.

Use to Be Made of the Findings

This investigation will provide data which will be analyzed to provide broad information about post-secondary vocational-technical education students. It will be useful in many areas for appraisal of manpower requirements, resources, utilization, education, and training. This is a program of information gathering and analysis. Even though the students of one particular institution will be used for this study, it will provide useful information relevant to not only this school, but to other similar post-secondary vocational-technical institutions, high school counselors, various state agencies associated with vocational-technical education, and others interested in post-secondary vocational-technical education. The current problems which exist in vocational-technical education will become more serious in the future as technological advances continue to demand more training, skill, and mobility in the labor force. It is hoped that the knowledge gained from this investigation will help to alleviate some of these problems and to aid the

vocational-technical education mission.

Outline of the Study

Chapter II contains an analysis of the economic and social significance of education. The effect of education on certain economic factors will be examined. Some of these factors are: income, unemployment, occupational requirements, and others. The interrelationship between education and social, cultural, and psychological factors will also be briefly examined. The purpose of this chapter will be only to demonstrate the importance of education in general. As a result of this analysis, it is hoped that the role of vocational-technical education in the whole picture of education can be seen.

Federal laws relating to vocational-technical education will be summarized in Chapter III. The findings of various federal commissions and panels on vocational-technical education will also be considered in an attempt to show their effect on the trend in federal vocational-technical education legislation, both on the secondary and post-secondary levels.

Chapter IV will deal with vocational-technical education in Oklahoma. The state vocational-technical education facilities and policies will be examined along with the state laws pertaining to this field of education.

Chapter V will be an analysis of one particular institution from which the vocational-technical education students are being analyzed, namely, Oklahoma State Tech. The programs

offered, the income and expenditures per student, and other associated factors will be surveyed.

Chapters VI and VII will analyze the graduates and dropouts of the Summer 1966 class of this institution. The characteristics of these students will be broken down into two principal divisions. They are: socio-economic and academic.

The socio-economic characteristics will be handled in Chapter VI. Various personal characteristics of the students such as, age, sex, race, marital status, and other related factors which might distinguish these students from students in other types and levels of education will be presented. Economic characteristics of these students will be analyzed next in Chapter VI. Earnings, labor mobility, types of occupations these students are employed in, and other similar economic variables will be studied. Notable social factors of these students will also be brought out in this chapter.

Academic characteristics of the graduates and dropouts will be examined in Chapter VII. Certain distinguishing characteristics will be noted. In addition, comparisons will be made between the dropouts and the graduates in an attempt to ascertain various factors which might indicate why some drop out and others graduate.

Finally, Chapter VIII will consist of a summary of the findings. Specific recommendations will be made here from the results of the study.

CHAPTER II

THE ECONOMIC AND SOCIAL SIGNIFICANCE OF EDUCATION

Introduction

During the past few years an increasing amount of attention has been given to the problem of preparing both youth and adults for entry into the changed and changing dimensions of the "world of work." All levels of education, and particularly post-secondary vocational and technical education, must quickly move to keep pace with these changes. The relative increase in the demand for people with skills and the corresponding relative decrease in the demand for the people without skills or with obsolete skills is a resulting effect of the far-reaching changes taking place in science and technology. However, this problem is not new; what is new is the rate of change that is taking place in the fields of science and technology. The present increase in the rate of technological change, including the area of automation and computer science, and the accompanying increase in population has only magnified the problem.

The Shift From Manual to Cognitive Work

The past emphasis on the manipulative skills has

been shifted to the emphasis on the cognitive skills through the "new technology." This shift to cognitive work from manipulative work can be shown in the long-term changes in the occupational distribution of the labor force as shown in Table 1. In 1900 the number of white-collar workers was less than half of the number of blue-collar workers. By 1960, the number of white-collar had more than equaled blue-collar workers, and by 1975, it is projected that the number of white-collar workers will be 43 per cent greater than the number of blue-collar workers. It is also important to note that operatives long considered the backbone of the industrial work force reached their highest percentage of the labor force in 1950 and since then have steadily declined in relative importance. In the blue-collar group, the craftsmen are the only ones who are expected to maintain their relative share in the labor market. The proportion of general laborers has declined steadily since 1900, and it is likely that this general trend will continue in the future.

In the white-collar group, the highly educated and skilled group (professional and technical) have made the greatest gains in recent years, and it is generally agreed that this trend will definitely continue in the future. The only group which will probably not suffer from this encroachment by the white-collar occupations is the service category.

The occupations which will become relatively more important in the future are those demanding higher levels of

TABLE 1

ACTUAL AND PROJECTED EMPLOYMENT AS A PERCENTAGE OF THE TOTAL UNITED STATES LABOR FORCE BY MAJOR OCCUPATIONS, SELECTED YEARS FROM 1900 TO 1975

	Actual								Projected	
Occupational Group	1900	1910	1920	1930	1940	1950	1960	1965	1970	1975
White-collar Workers	17.6	21.3	24.9	29.4	31.1	36.6	42.3	44.5	46.8	48.3
Professional, Technical, and Kindred Workers	4.3	4.7	5.4	6.8	7.5	8.6	11.4	12.3	13.7	14.9
Managers, Officials, Proprietors, Except Farm	5.8	6.6	6.6	7.4	7.3	8.7	8.4	10.2	10.3	10.4
Clerical and Kindred Workers	3.0	5.3	8.0	8.9	9.6	12.3	15.0	15.5	16.3	16.5
Sales Workers	4.5	4.7	4.9	6.3	6.7	7.0	7.5	6.5	6.5	6.5
Blue-collar Workers	35.8	38.2	40.2	39.6	39.8	41.1	39.6	36.7	34.9	33.7
Craftsmen, Foremen, and Kindred Workers	10.5	11.6	13.0	12.8	12.0	14.1	14.3	12.8	12.8	12.8
Operatives and Kindred Workers	12.8	14.6	15.6	15.8	18.4	20.4	19.9	18.6	17.5	16.7
Laborers, Except Farm and Mine	12.5	12.0	11.6	11.0	9.4	6.6	5.4	5.3	4.6	4.2
Service Workers, Including Private Household	9.0	9.6	7.8	9.8	11.7	10.5	11.8	12.9	13.5	14.1
Farmers, Farm Managers, Laborers and Foremen	37.5	30.9	27.0	21.2	17.4	11.8	6.3	5.9	4.8	3.9

Source: Manpower Report of the President and A Report on Manpower Requirements, Resources, Utilization, and Training by the U.S. Department of Labor (Washington: Gov't Printing Office, 1963 and 1966), p. 201 and p. 217, respectively.

skill development and education. More and more occupations are requiring specialized skills and knowledge for which there must be prior training and education. Therefore, education is important not only for the general development of the individual and the preservation of our culture and way of life, but also for preparing a person for the world of work which he faces. Our technologically orientated economy of today has very little to offer the untrained, under-educated worker. The relative opportunities for employment in the lower occupational categories--the jobs that demand comparatively lesser amounts of education and skill development--are decreasing. However, these jobs have traditionally served as the mode of entry for most young workers into the labor force. No longer is there any room at the bottom of the occupational categories.

Relationship Between Education and Occupational Entry

The close relationship between the level of educational achievement and occupational entry and upgrading is demonstrated by the median years of schooling completed by the workers within each of the major occupational groups as shown in Table 2. However, the information in Table 2 does not tell the full story of the nature of the educational requirements that are necessary for the young workers entering an occupation today. Today a high school diploma is an almost necessary requirement to obtain entry into a production

TABLE 2

MEDIAN YEARS OF SCHOOL COMPLETED BY THE UNITED STATES EMPLOYED LABOR FORCE 18 YEARS OLD AND OVER, BY OCCUPATIONAL GROUP, SELECTED YEARS

Occupational Group	Median Years of Schooling				
	March, 1967	March, 1962	March, 1957	March, 1952	October, 1948
White-collar workers professional, technical, kindred workers	16.3	16.2	16.+	16.+	16.+
Managers, officials, proprietors, except farm	12.6	12.5	12.4	12.2	12.2
Clerical and kindred workers	12.5	12.5	12.5	12.5	n.a.
Sales workers	12.5	12.5	12.4	12.3	n.a.
Blue-collar workers Craftsmen, foremen, kindred workers	11.9	11.2	10.5	10.1	9.7
Operatives and kindred workers	10.7	10.1	9.5	9.1	9.1
Laborers, except farm and mine	9.5	8.9	8.5	8.3	8.0
Service workers, including private household	10.9	10.2	9.0	8.8	8.7
Farmers, farm managers, laborers	8.8	8.7	8.5	8.3	8.0
All occupational groups	12.3	12.1	11.7	10.9	10.6

Source: Manpower Report of the President and A Report on Manpower Requirements, Resources, Utilization, and Training by the U.S. Department of Labor (Washington: Gov't Printing Office) April 1, 1967, p. 241; March 1965, p. 227.

orientated job. To become a foreman some technical skill is required, and to become a supervisor, it is usually necessary to possess a bachelor's degree. For the professions, a college education is mandatory, and frequently graduate study is a necessity for advancement. In addition, all of the technical, skilled, and semi-professional occupational groups are now demanding certain amounts of post-secondary education and training for entrance. As the data in Table 2 reveal there has been a steady increase in the level of higher education and skills needed for entry into and retention in the various occupations. Education has become the critical and crucial ladder and barrier in the world of work.

Unemployment and Education

The importance of education can also be demonstrated by looking at the unemployment rates of males, 18 and over, for various levels of educational achievement (Table 3). The overall unemployment rates were not substantially different for the two selected years, 1950 and 1960. They were 6.2 per cent in 1950 versus 6.0 per cent in 1962. However, in looking at Table 3 we can see that a redistribution of unemployment has taken place. Unemployment rates for the higher levels of educational attainment went down, while the unemployment rates at the lower and also middle levels of educational attainment went up substantially. The inevitable conclusion is that there is by far a greater demand for those workers with formal skills, training, and education, and a considerably

smaller demand for those workers having little or no formal skills, training, and education.

TABLE 3

UNEMPLOYMENT AND EDUCATION, FOR MALES 18 AND OVER, APRIL, 1950 AND MARCH, 1962 -

Years of School Completed	Unemployment Rates 1950	1962	Change 1950-1962
	(In per cent)		(In per cent)
0 to 7	8.4	9.2	↗ 9.5
8	6.6	7.5	↗13.6
9 to 11	6.9	7.8	↗13.0
12	4.6	4.8	↗ 4.3
13 to 15	4.1	4.0	- 2.4
16 or more	2.2	1.4	-36.4
All Groups Combined	6.2	6.0	- 3.2

Source: Charles C. Killingsworth, "The Bottleneck in Labor Skills," The Battle Against Unemployment, (Ed.) Arthur M. Okun (New York: W. W. Norton Company, 1965), p. 34.

The direct economic gains to individuals from greater amounts of education can accrue through two means. One is that of a lower unemployment rate which has just been discussed, and the other is that of higher earnings.

Income and Education

With reference to the education-income relationship, numerous studies have been conducted which show that persons with more education tend to earn higher incomes.[1] More

[1] See, Gary S. Becker, "Underinvestment in College Education?" American Economic Review, L (May, 1960),

schooling, especially at the secondary and post-secondary levels does improve the productivity of the worker and thereby compensates him for his investment in education, lost earnings, and effort expended on his educational pursuits.

Some of the basic statistics pertaining to the relationship between educational attainment and median income and percentage distribution of income for various levels of education of males, 25 and over, are presented in Table 4. The annual median level of income for men in 1966 who had not finished elementary school was $2,576, while it was $4,210 for those who had completed elementary school. The median income for high school graduates was $6,458 which was $924.00 annually more than those who started high school but did not finish received. For those who had attended some college, the median income was $7,222, for those who had graduated from college $8,748, and $9,613 for those who had five or more years of education.

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pp. 346-54; Gary S. Becker, Investment in Education (New York: National Bureau of Economic Research, 1965); Gary S. Becker, "Investment in Human Capital: A Theoretical Analysis," Journal of Political Economy (Supplement), LXX, No. 5, Pt. 2 (October, 1962, pp. 9-49; Jacob Mincer, "On-the-job Training: Costs, Returns, and Some Implications," Journal of Political Economy (Supplement), LXX, No. 5, Pt. 2 (October, 1962), pp. 50-79; Herman P. Miller, "Money Value of an Education," Occupational Outlook Quarterly, V, No. 3 (September, 1961), pp. 3-10; Herman P. Miller, "Annual and Lifetime Income in Relation to Education: 1939-1959," The American Economic Review, L, No. 5 (December, 1966), pp. 962-86; Theodore W. Schultz, "Investment in Human Capital," American Economic Review, LI, No. 1 (March, 1961), pp. 1-17; Burton A. Weisbrod, "Investing in Human Capital," Journal of Human Resources, I, No. 1 (Summer, 1966), pp. 1-21.

TABLE 4

MEDIAN INCOME BY YEARS OF SCHOOL COMPLETED AND PERCENTAGE DISTRIBUTION OF INCOME RECIPIENTS FOR YEARS OF SCHOOL COMPLETED OF MALES 25 AND OVER FOR 1966

Total Money Income	Total	Years of School Completed											Median Years of School Completed
		Elementary School			High School			College					
		Total	Less than 8	8	Total	1 to 3	4	Total	1 to 3	4 or more			
										Total	4	5 or more	
Per Cent	100	100	100	100	100	100	100	100	100	100	100	100	
$1 - 999 or less	6.3	12.6	16.5	8.1	3.3	4.3	2.8	3.0	3.7	2.5	2.6	2.5	8.2
$1.000 - 1.999	9.5	19.5	23.7	14.8	5.2	6.9	4.2	3.4	4.1	3.0	3.1	2.8	8.3
$2.000 - 2.999	9.1	15.3	17.0	13.4	6.6	7.8	5.8	4.7	5.9	3.9	3.6	4.4	8.8
$3.000 - 3.999	8.9	11.7	12.2	11.2	8.7	10.6	7.6	5.0	5.7	4.5	3.8	5.5	10.0
$4.000 - 4.999	9.5	10.1	8.5	11.9	11.0	12.6	10.0	5.3	6.4	4.6	5.2	3.7	10.9
$5.000 - 5.999	11.2	9.9	7.9	12.1	13.7	14.6	13.1	8.1	9.7	7.0	7.4	6.5	11.8
$6.000 - 6.999	10.9	7.7	5.9	9.8	13.8	13.2	14.2	9.6	11.7	8.1	9.0	6.7	12.2
$7.000 - 7.999	9.7	5.1	3.3	7.2	12.7	10.5	14.1	10.3	12.6	8.7	9.2	7.9	12.3
$8.000 - 9,999	11.1	4.9	3.2	6.8	15.3	10.9	14.8	15.7	17.1	14.7	16.3	12.4	12.5
$10.000 - 14.999	9.7	2.5	1.5	3.6	9.3	6.6	11.0	21.5	16.3	25.1	25.3	24.9	12.9
$15.000 24.999	3.1	0.6	0.3	0.9	1.7	1.4	1.9	9.8	5.1	13.1	11.1	15.9	16.1
$25.000 and over	1.1	0.1	0.1	0.2	0.6	0.4	0.7	3.6	1.8	4.8	3.5	6.8	16.3
Median Income	$5,558	$3.222	$2.576	$4.210	$6.109	$5.534	$6.458	$8.076	$7.222	$9.048	$8.748	$9.613	11.9

Source: U. S. Bureau of Census Current Population Reports, "Consumer Income," Series P-60, Number 51, January 12, 1967, p. 34.

The data on the pecuniary returns from more education are noteworthy. They point to sizable economic returns from investment in human capital. However, it is always possible, and in many instances probable, that in addition to more education higher incomes of those workers with more schooling are due, to a greater degree, to the institutional arrangements of society and other personal and social factors such as, family connections and status, home environment, social and cultural values, abilities and efforts of individuals, quality of education, differences in occupational characteristics, and other associated factors. We cannot be certain how much of the additional income associated with more education is attributable to these factors, and how much is attributable to the educational process itself. Therefore, caution is required in interpreting the effect of education on unemployment rates and earnings.

Education can reduce unemployment and increase earnings by enhancing the matching of labor-force skills with employer needs. The economic value of education lies particularly in its contribution in building the individual's productive "potential," rather than in its contribution to the economy's success in actually achieving that potential. When the task is actually that of attaining and maintaining full employment, education is not an adequate substitute for appropriate fiscal and monetary policies to insure a growing and healthy economy. However, it is an important and needful

complement in achieving full employment. Bottlenecks in the economy, like structural imbalances in the labor force, can create severe problems for a nation in achieving the objectives of a full-employment, full-capacity economy. In a dynamic economy and society, more and continual training and education are required to keep pace with the fast-moving and complex changes taking place in the world of work.

Productivity of Investment in Education

Attempts have been made recently to estimate the productivity of investment in education in the United States. Gary S. Becker estimates that the rate of return on total investment in college education (this includes lost earnings, direct costs to the students, and the share of costs borne by the college) came to 9 per cent after taxes for white urban males. The rate of return remained the same for the two years considered--1940 and 1950. The average rate of return for all college graduates was estimated to be somewhat lower, 7 per cent. The method used for these estimates is based only on comparing the average life income of college graduates with that of persons without equivalent education employed in similar occupations. Therefore, the estimates include only the direct material benefit--the added extra income of the individual concerned--and they exclude the direct and indirect benefits to the country resulting from the improvement in the educational levels of the society, the

so-called external economies of education.[2]

Adger B. Carroll and Loren A. Ihnen have estimated the earnings advantage of graduating from a two-year technical institute. They found that the total social investment (including public as well as private costs) returned 11.7 per cent per graduate. In this study graduates of a certain technical institute were compared with people who had no post-secondary vocational-technical training. An intensive effort was made to isolate the actual effects of education on income and to exclude other factors such as geographic variables, differences in abilities, property ownership, and others.[3] Similar cost-benefit studies on vocational-technical training have resulted in comparable findings.[4]

Economists have attempted to compute what proportion of the increase in gross national product of the United States over a period of time can be attributed to quantifiable inputs of capital and labor and then to consider the "residual" as a result of, among many other things, improvements in the actual quality of the labor force resulting from more training, education, health, and so forth. Robert Solow has computed this

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[2]Becker, "Underinvestment in College Education," op. cit., pp. 346-54.

[3]Carroll and Ihnen, "Costs and Benefits of Training in a Technical Institute," United States Department of Labor Manpower/Automational Research Notice, Contract Number 81-32-11, 1966, pp. 1-2.

[4]Theodore W. Schultz, Social Forces Influencing American Education (Chicago: National Society for the Study of Education, 1961), p. 78.

residual to be equal to 87.5 per cent of the increase in output per man-hour between 1909 and 1949.[5] However, Solow has recently reemphasized the great difficulty and ambiguity in measuring the contribution of resources allocated to research, education, training, and health as compared to measuring the contribution of capital formation in the conventional sense.[6]

Theodore Schultz has examined the increase in real income in the United States between 1929 and 1956 and estimates that between 36 per cent and 70 per cent of the rise in real income can not be explained by an increase in the stock of tangible capital per worker. He feels that this unexplained increase can possibly be considered as a return on the investment in additional education and training made in the labor force.[7] This estimate gives only a general indication of the magnitude of the investment in human capital. However, it is more realistic than the estimates of returns of education per individual (Table 4) since it measures the total impact of education and training on the economy and not only its direct benefits to the individuals concerned. The

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[5]Robert M. Solow, "Technical Change and the Aggregate Production Function," Review of Economics and Statistics, XXXIX, No. 3 (August, 1957), pp. 312-30.

[6]Robert M. Solow, "Technical Progress, Capital Formation, and Economic Growth," Papers and Proceedings of the Seventy-Fourth Annual Meeting of the American Economic Ass'n, December 27-29, 1961, American Economic Review, LII, No. 2 (May, 1962), pp. 76-86.

[7]Schultz, "Investment in Human Capital," op. cit., p. 13.

contribution to national output made by improvements in the quality of human resources through the educational process is obvious, although actually assessing its impact on an economy is extremely difficult and inexact.

Social Benefits of Education

Some of the economic benefits from education and training are readily identifiable. Other benefits from education and training are of a social and cultural nature. In fact, the social and cultural advantages and benefits associated with more schooling may well be worth their cost in time, money, and effort, even if the economic justifications should cease to exist. The economic advantages, though, are currently more capable of approximate measurement. Some of the benefits of education and training are distributed so broadly that the nature of specific beneficiaries is obscure and not easily ascertainable. Because these social and cultural benefits are less pervasive through quantification, however, does not mean that they are less important. For example, literacy is of value not only to those individuals possessing it, but also to employers and to society in general. Without a high degree of literacy in our society, the transmission and diffusion of information and knowledge would be greatly restricted. The maintenance of oral and written communication is of vital importance in a dynamic and free society.

Research and scientific discovery are dependent on an

expanding technological base. This pyramiding base is built on the work of others. The rapid growth of scientific knowledge offers the possibility of tremendous advances in technology, though it provides no certainty that these advances will be realized. The key to this realization lies in the dissemination of this knowledge of science and technology to the actual application of such. More and better education in the skilled, technical, semi-professional, and professional levels must be made available soon to a greater number of citizens, otherwise the national economy and social structure will suffer irreparable damage. Manpower needs on the professional level, especially for scientists and engineers, are widely known. Nevertheless, shortages are acute and will, in all probability, become greater. A considerable amount of effort has been put into remedying this condition, but more needs to be done. However, the need and role of technical personnel is not so clearly understood and demands more immediate attention. Industry is finding that supportive personnel, the middle-manpower categories, are also becoming more important and consequently more scarce. Various studies show that many of the routine functions of engineers and scientists could be easily performed by workers with limited, specialized education and training. In the coming years we will need many more new technicians than scientists and engineers. For example, the most desirable ratio is 200 to 400 technicians for

each 100 scientists and engineers.[8] However, recent studies show that ranges of 50 to 90 to 100 exist.[9] What this suggests is that there is a gross misuse of professional manpower which can only be corrected through a greatly stepped-up program of technical education.

A similar situation prevails in the skilled trades and occupations. More than four million skilled jobs will open up in the next decade.[10] All of these will require people with highly developed skills and considerable related knowledge. The development of an adequate vocational education system is, therefore, a requisite to solving the imbalances which will exist in the skilled craft occupations of the labor force.

Psychological Benefits of Education

Many of the social and psychological effects of education are subtle in nature. For example, with the shift in the forces of industrialization and technology, the meaning of the word "work" and man's relationship to it has changed drastically. With the displacement of human muscle power by

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[8]Lynn A. Emerson, "Technical Training in the United States," Education for a Changing World of Work: Report of the Panel of Consultants on Vocational Education, App. I (Washington: Gov't Printing Office, 1963), p. 36.

[9]Bureau of Labor Statistics, "The Long-Range Demand for Scientific and Technical Personnel," prepared for the National Science Foundation (Washington: Gov't Printing Office, 1961), p. 44.

[10]Allan F. Salt, "Estimated Need for Skilled Workers, 1965-75," Monthly Labor Review, LXXXIX, No. 4 (April, 1966), p. 365.

automated machine, the production of vast surpluses is possible; abundance has replaced scarcity. Only a small percentage of the present labor force is engaged any longer in what earlier centuries would have called "hard" work. This situation leads to a particular problem. Machines have replaced men in the so-called "hard work." Hard work today means mostly boring and repetitive work, whether in the factory or in the office. However, the instinct for workmanship, the desire to feel needed, and the will to achieve are deeply engrained in every individual. These human characteristics are not universally fulfilled by the kind of work many people do. And so today we have substituted the "job" in place of "work" in many cases. Wilbur B. Brookover and Sigmund Noscow write that the, "individual has few other statuses (than the job) which are capable of offering him a respected position in the community."[11] A man's occupation in American society is presently his single most important status-conferring role. Whether the job be a high or low status job, it allows the individual to form some stable conception of himself and his position in the community in which he lives. Therefore, the job itself and the education and training which brings it about are of crucial importance in the contemporary American society.

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[11]"A Sociological Analysis of Vocational Education in the United States," Education for a Changing World of Work: Report of the Panel of Consultants on Vocational Education, App. III (Washington: Gov't Printing Office, 1963), p. 26.

Another great concern is that of unemployment. The apparent social and psychological effects of joblessness are painfully apparent today in America. As a consequence of technological change, many people remain unemployed or underemployed. These people consist of high school graduates as well as dropouts, adults who have been squeezed down and subsequently off the employment ladder, women who wish to enter or possibly re-enter the labor force, the culturally and socially disadvantaged, and groups which suffer handicaps. The causes of unemployment are complex. Some of the causes can be traced to the industrial order itself. However, insofar as the individual is concerned, one common cause for unemployment is the lack of a salable skill. The choice then for many is to acquire a salable skill or to settle down on public aid as a way of life.

Probably the most serious impact of unemployment, and particularly for the long-term unemployed, is a loss of confidence and usefulness. The loss of long-tenure employment is a traumatic shock. And as unemployment continues for the unwanted worker, he quite understandably feels bitter toward those he felt were responsible for his plight and about the system that seemed to deny him a job. In addition, a whole range of emotions is exhibited by the unemployed worker--frustration, bewilderment, anger, and resentment. The over-all picture for the long-term unemployed is a very tragic one, both for the individual himself and for the economy

that fails to utilize its human resources. Statistical compilations of the effect of technology on the labor force can be compelling, but for millions of people the problem of adequate and appropriate work is very real and personal.

Underemployment is also another serious aspect of our manpower resource problem. In fact, this is probably the most difficult problem in the sphere of wasted human manpower resources. Underemployment is a situation where a worker is employed below his actual or potential skill level. The data on this problem are limited. No real attempt has been made to systematically measure and study the number of persons working below their acquired or potential skill levels. However, numerous examples have come to light through special studies and general observation.

That underutilization of abilities as a major problem can be demonstrated by related educational data. A little over half of all high school graduates are going to college. And also about a quarter of the people who are capable of obtaining a college degree are not enrolling in post-secondary education.[12] Underutilization of resources is also demonstrated by looking at income statistics. Negro workers earn less than comparable white workers (taking into consideration age, education, and other factors) in the same occupation and industry. The same thing can also be shown for women. Discrimination is a very important cause of underemployment.

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[12]Manpower Report of the President, 1967, p. 167.

The waste involved in the failure to realize and utilize the worker's full potential cannot be quantified until much more study has been made of it. It is readily apparent though that this kind of underutilization of manpower runs deep. It can be eliminated only as progress is made in overcoming the discriminatory barriers that exist in employment and extending the educational, training, and other services needed to develop more fully the abilities of present and potential workers.

The economic effects of unemployment and underemployment can be generalized, even though at times they can not be fully quantified. But what about the social and psychological aspects of unemployment and underemployment? A living that will satisfy a man's "nature as a man" cannot be earned necessarily by a vocation or work which leaves his "nature as a man" poverty stricken, stunted, or starved. If his work or vocation is neither personally enjoyable to himself nor socially valuable to his fellow human beings, the "living" earned by it will be affected. The worker's "living," which is only another name for his life, will be consumed in the dull hours or meaningless years devoted to it. On the contrary, the worker who enjoys his work will more readily receive a good "living" in the actual process of doing his work. We make a serious mistake in setting up a sharp division between the work which earns our "living" and the "living" that is earned. The real value then to the individual of the life

that he lives depends on how well he is educated, trained, and prepared to participate enthusiastically and intelligently in earning a living in the world of work. The worker must extract all that he can from education and training so that he can make his vocation yield his desired objectives.

The concept that human resource development either can or should be analyzed solely on economic terms is inappropriate and misleading. It is wholly incorrect to assume that the central purpose of human resource development is to maximize the worker's contribution to the production of goods and services, or to measure the return on education solely in terms of increases in the worker's income or the income of the economy as a whole. Increases in productivity or income should not be used as the sole criteria of the effectiveness of human resource development. Even though economists as individual members of society have a much broader view of the goals and objectives of society, they tend at times to measure progress exclusively by economic criteria.

It is equally fallacious, though, to suggest that education and training and other associated means of human resource development and conservation should be considered human "rights" or "privileges" irrespective of their contribution to the production of useful goods and services for the economy.[13] However, education to enhance a person's growth

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[13]See: Robert Ulich, The Education of Nations: A Comparison in Historical Perspective (Cambridge: Harvard University Press, 1961), Ch. V, "The Era of Technology," and

and social usefulness, to allow him to assume the full responsibilities of citizenship, to give him a fair chance to exercise his right to the pursuit of happiness, to stimulate his intellectual curiosity, to engender in him satisfaction in intellectual achievement, to cultivate in him the ability to think rationally, and to help him develop an appreciation for the ethical values which undergird life in a democracy are all traditionally regarded as goals of the American educational system.[14]

Either approach, the purely humanistic or the economic approach to resource development, distorts the true meaning of the economic, social, political, and cultural aspirations and objectives of society. What is needed is a unified and coordinated approach via various disciplines for all levels of education.

Manpower Policies

Because of the current acuteness of unemployment, society has become pre-occupied with providing training and education programs of a short, intensive nature for one or another of the categories of unemployed. This type of re-training and re-education (for example, the Manpower Develop-

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Paul R. Hanna, Education: An Instrument of National Purpose and Policy (New York: McGraw-Hill Book Co., Inc., 1962), pp. 2-3.

[14]National Education Association, Education for All American Youth, Educational Policies Commission and American Association of School Administrators (1944), p. 21.

ment and Training Act and Area Redevelopment Act programs) is necessary and desirable because many workers will have to change vocations several times during their lifetimes. The Department of Labor projects that the average youth of today will probably shift occupations some five times over the next forty years that he will be in the labor force.

However, what is needed is the development of an adequate, permanent vocational-technical and post-secondary educational system to provide a program of training and continual retraining. How to provide such a system as an integral part of the total education picture and how to avoid deadend tracks for those who take vocational-technical and college education and training constitutes one of the major educational challenges of today. Flexibility becomes an important factor in the school system's response to the world of work. A life of continuing occupational adjustment will mean a life of continuing education to meet the changed, changing, and additional educational requirements. In recent years the United States has seen the development of "active" manpower policies on the part of the government. Seymour Wolfbein, a leading authority on manpower economics, defines an active manpower policy as:

> . . . the process embracing those principles and programs which aim to assist the individual to become fully employed in productive work of his choosing consonant with his aptitudes, talents, and interests under fair standards; to help sustain and rehabilitate the individual experiencing economic or personal hardship; and to help maintain the individual in as adaptable, flexible, and

> responsive a stance as possible to changing requirement of the world of work.[15]

In the 1965 Manpower Report, the President stated that such a policy embraces programs:

1. to stimulate more employment opportunities;
2. to upgrade the skills and adaptability of our work force;
3. to link the two--jobs and men--more effectively.[16]

Four major factors may be thought to be included in such a policy: 1) the provision for improved manpower demand and supply information to individuals, employers, and government agencies; 2) the actual development of this manpower supply through education, training, retraining, rehabilitation, and research; 3) assisting in matching men to jobs through more effective employment service, guidance and counseling, and improved labor mobility; and 4) the maintenance of equitable standards of hours, work, safety, and nondiscrimination.[17]

Conclusion

Wasted human resources can never be replaced. Unlike capital and natural resources which can be more readily stored (or not used), human resource productivity is lost if a person is unemployed or underemployed. Because of this

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[15] Seymour L. Wolfbein, Employment, Unemployment, and Public Policy (New York: Random House, Inc., 1965), p. 121.

[16] United States Department of Labor, Manpower Report of the President, 1965 (Washington: Gov't Printing Office), p. ix.

[17] Wolfbein, op. cit., p. 126.

complexity to the problem of manpower economics, urgency is necessary in the attempt to make full use of our human resources and powers.

There does not need to be in reality any conflict between the economists and the humanists. If, as usually assumed, one of the major goals of a society is economic growth, then programs for human resource development must be set up to provide the knowledge, skills, and incentives required for a productive economy. But if one rejects the idea that investment in education must be productive, he should then be prepared to also reject the goal of rapid economic growth. If he does accept the goal of rapid economic growth and the idea that education and training must be significantly orientated to promote it, he does not need to reject the humanitarian concept of education and training.

The development of man for himself should still be considered the ultimate end with economic progress serving as one of the principal means of attaining it. Human capital development systems can be constructed which deliberately help to increase the production of essential goods and services while at the same time preserving and enhancing freedom, dignity, and the worth of the individual.[18]

The objectives of a modern society are social, cultural, and political as well as economic. The development

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[18]Adam Curle, "Some Aspects of Educational Planning in Underdeveloped Areas," Harvard Educational Review, XXXII, No. 3 (Summer, 1962), p. 300.

of human resources is necessary to achieve all of these. In an advanced country the capacities and abilities of men are more extensively developed, and in a primitive country they are, for the most part, underdeveloped. If a country is unable to develop its human resources, it cannot expect to develop much else, whether it be a sense of national unity, a modern political and social structure, or higher standards of material wealth. Progress is the result, to a great extent, of human effort. Therefore, human resource development may be a more realistic and reliable indicator of development, growth, and modernization than any other single measure. Nevertheless, it does not explain everything. Other factors are also very necessary.

This brief analysis of education and its effect on the economic, social, psychological, and cultural characteristics of man and society is intended to focus attention on the essentials of the complex problem of education and training. Training and education programs must be better tailored to our present and projected needs of society. There are various levels to the training and education process. These levels and programs must be dovetailed so that no gaps will be left open. Secondary and post-secondary education and training, be they vocational, technical, or academic, need to be scrutinized so that all will be able to benefit from them, not just a few.

No special effort has been made in this chapter to

distinguish between the various levels and types of training and education. However, the importance of post-secondary vocational-technical training and education in the whole education and training picture can readily be seen. The purpose of this chapter has been only to demonstrate the economic and social importance of education and training in general.

CHAPTER III

FEDERAL LEGISLATION FOR VOCATIONAL-TECHNICAL EDUCATION

Commission on National Aid to Vocational Education

The Magna Charta of vocational-technical education in the United States was developed by the Commission on National Aid to Vocational Education.[1] This commission was authorized by a resolution of Congress passed on January 20, 1914, to study the needs of vocational education and make recommendations for federal legislation.

The Commission held numerous conferences and attempted to determine: 1) the need for vocational education; 2) the need for federal grants; 3) the kinds of vocational education for which grants should be made; 4) the extent and conditions under which aid should be granted; and 5) proposed legislation.

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[1] Report of the Commission on National Aid to Vocational Education (Washington: Gov't Printing Office, 1914), Vols. I & II. The Commission consisted of Hoke Smith, Senator from Georgia, Chairman; Carroll S. Page, Senator from Vermont; Dudley M. Hughes, Representative from Georgia; Simeon D. Fess, Representative from Ohio; John A. Lapp, Director of the Indiana Bureau of Legislative Information; Florence M. Marshall, Director of the Manhattan Trade School; Agnes Nestor, President of the International Glove Workers' Union; Charles A. Prosser, Secretary of the National Society for the Promotion of Industrial Education; and Charles H. Winslow, Special Agent of the United States Department of Labor.

It said that there were two important assets of a nation which enter into the production of wealth, whether agricultural or industrial. They are natural resources and human labor. The conservation and utilization of both of these depend upon vocational education and training. Thus vocational education and training is required on economic grounds: 1) to conserve and develop our natural resources; 2) to promote a more productive and prosperous agriculture; 3) to prevent waste of human labor; 4) to provide for a supplement to the apprenticeship program; 5) to increase the wage earning power of the worker; 6) to meet the increased demand for trained workmen; 7) to offset in part the increased cost of living; 8) to promote business; and 9) to promote national economic prosperity.[2]

The social and economic needs for vocational education and training were said to be equally urgent. This type of education and training was needed to democratize the educational process of the country. Different tastes and abilities were to be recognized by giving equal opportunity to all to prepare for their life work. It was thought that equality of educational opportunity in the current system of education was not being afforded to the mass of the people. The Commission said that although here and there the beginnings of change were being seen, it was still true that the school system was largely planned for the few who prepare for college rather than for the large number who go into industry.[3]

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[2] Ibid., p. 12. [3] Ibid.

The need for federal grants to states for vocational education was discussed in length in the body of the Commission's Report. In the Summary of Findings, the need for agricultural, trade, and industrial education was justified: 1) by the urgency of the demand for the effective training of our workers which the states cannot meet in time without federal encouragement and aid; 2) by the interstate and national character of the problem due to nationwide interest and importance; 3) by considerable precedent based on Congressional appropriations for education throughout the United States history and on the past cooperation between the federal and state governments where coordinated effort was necessary in handling matters that could not be handled as well by the states alone; 4) by the successful results to the nation and also to the states of previous grants for educational purposes; 5) by the fact that an overwhelming public sentiment favors federal grants to the states for vocational education and training of less than "college" grade for the duties of the farm and shop;[4] and finally, 6) by the far greater importance of the human problem of preparing our people for life and work over that of the many purely physical problems on which the federal government expends money.[5]

Specifically, the Commission recommended that federal assistance be given to the states in a cooperative program of

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[4] Ibid., p. 13.

[5] Ibid., p. 39.

vocational education on the secondary level. Teacher salary and training costs were to be federally supported with the cost of the facilities and maintenance to be borne by the states. It was suggested that 50 per cent of school time of vocational education students be devoted to shop work of a "useful" or "productive" nature. However, no particular suggestions were made as to the type and method of educational instruction. The Report, though, did contain suggestions on the amount of grants, the administration of the various programs, and the safeguarding of funds. Day schools, part-time schools, and evening schools were all to be provided with funds. Schools that received aid were to be supported and controlled by the local citizenry.

It is also significant to note that the Commission advised that an independent federal board should be created to administer the programs in cooperation with the boards that were to be created or designated by the states. The federal board was to be composed of the Secretaries of the Interior, Agriculture, Commerce and Labor, the Postmaster General, and the Commissioner of Education. The latter was designated as chairman. To a great extent the Office of Education was by-passed; duality for the programs was to begin at the top.

In many ways the Report of the Commission on National Aid to Vocational Education was a confirmation of the programs already in existence. It seems that the primary purpose of

the Commission was to amplify the existence of the problem, the lack of sufficient vocational education, and to encourage the passage of both federal and state legislation.

National Vocational Education Act of 1917 (Smith-Hughes Act)

The final report of the Commission on National Aid to Vocational Education was submitted to Congress on June 1, 1914. The Report terminated in a chapter entitled, "Proposed Legislation." This chapter eventually resulted in a bill embodying the recommendations of the Commission concerning federal aid to the states for vocational education. However, the proposed legislation was not introduced until December 15, 1914, and it was not until February 23, 1917, that the National Vocational Education Act, known as the Smith-Hughes, became law.[6] Interestingly, the final push for the adoption of the bill was supplied by the United States Chamber of Commerce when its membership endorsed federal grants for vocational education.

The Smith-Hughes Act does not provide for the organization, operation, or direction of vocational schools or classes by the federal government. It only set up a cooperative arrangement under which annual payments of money are made to the several states for the promotion and development of programs of vocational agricultural, trade, industrial and home economics education. The actual operations of the programs are to be conducted by the states and the local

[6]Public Law Number 347, 64th Congress.

communities within these states. The grants of money are conditional and the acceptance of such grants obligates the states to expend the money paid to them according to the provisions of the Act. This money is to be used only as a reimbursement for not more than 50 per cent of the salaries of the vocational education teachers. The law requires that for each dollar of federal money expended on salaries the state or local community or both must spend an equal amount. For agricultural subjects, the funds so appropriated for salaries are alloted to each state in the proportion that its rural population bears to the rural population of the United States. The funds appropriated as a reimbursement for the salaries of teachers of trade and industrial and of home economics subjects are allocated to each state in the proportion that its urban population is to the urban population of the United States. The costs of providing other essential needs for vocational education such as school buildings, equipment, supplies, and maintenance, are to be provided at the expense of the state or local communities.

Many of the provisions of the Act are general in nature and apply to all phases of the vocational education that are covered, while others relate only to each of the several fields of vocational education which the Act is intended to promote. The general sections of the Act cover such matters as the method for apportioning the annual allotments made to the states, the specified minimum allotment for

each state, the creation or designation by each state legislature of a State Board to administer the funds apportioned to the individual states, the method of matching the federal funds used by the states or localities, and other sundry details.

Each state is required to prepare a state plan for vocational education and to agree: 1) that their federally aided programs of vocational education will be under direct public supervision and control; 2) that the controlling purpose of this education will be to fit the students for useful employment; 3) that the vocational education will be less than "college" grade; 4) that the programs will be designed to meet the needs of persons over fourteen years of age who had entered upon or who were preparing to enter into the occupation for which they were receiving training; and 5) that the state or local community or both will provide the necessary plant and equipment.

One of the sections of the Act sets up funds for the preparation of vocational education teachers. Each state is required to expend at least 20 per cent of its allotment for teacher-training funds in each given field of work, if it is to receive its apportionment of funds for the salaries of teachers in that field. With the use of funds for trades and industry and for home economics education, certain specifications were made in reference to length of school term, use of funds for part-time classes, and age of evening school

students. The Federal Board for Vocational Education was directed to engage in the necessary studies and investigations to insure an efficient and productive program.

In order to allow time for the gradual development and growth of vocational education, the Act appropriated funds for apportionment to the states in increasing amounts for a period of nine years. Beginning with the year which ended June 30, 1918, the appropriation was 1.5 million dollars. This amount was increased each year until the maximum of 7.2 million dollars was reached in 1928, with this amount continuing annually thereafter. The 7.2 million dollars is distributed as follows: 3 million dollars for agricultural education, 3 million dollars for trade and industrial and home economics education, 1 million dollars for teacher training and research, and the remainder for federal costs of administering the cooperative program.

The Smith-Hughes Act originally applied only to continental United States. In 1924, a supplementary Act was passed extending aid for such work to Hawaii.[7] And in 1931, another Act provided for similar education to Puerto Rico.[8] The 1924 extension made $30,000 available for use in Hawaii and the 1931 extension authorized for use in Puerto Rico annual appropriations of $30,000 each for agriculture, home

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[7]Public Law Number 35, 68th Congress.

[8]Public Law Number 791, 71st Congress.

economics, and trade and industrial education and $15,000 for teacher-training. The new funds in each of these extensions were made available under the same terms and conditions that applied to the states.

The Vocational Education Act of 1917, the Smith-Hughes, was the culmination of an evolution leading to more federal-state cooperation in supporting education and, more specifically, vocational education. Many of the earlier acts supporting general education imposed a few conditions on the use of federal money by the states. However, it is safe to say that the Vocational Education Act of 1917 is very specific and exacting in the use of Federal funds for vocational education by the states. It was felt that these federal controls would preserve the integrity of the various vocational education programs from interference from hostile general education supporters in the states and local communities.

George-Reed Act

Shortly after the maximum appropriations provided under the Smith-Hughes Act had been reached in 1926, it became evident that more funds were needed for vocational education. In 1929, Congress recognized this need and passed the George-Reed Act providing funds for vocational home economics and vocational agricultural education.[9] This Act authorized, for a period of five years ending June 30, 1934, funds to be

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[9]Public Law Number 702, 70th Congress.

apportioned to the states and territories for vocational education in agricultural and home economics education. An amount of $500,000 was authorized for the first year with the amount increasing by $500,000 each year until a total of $2.5 million was reached. These amounts were to be divided equally between agricultural education and home economics education and were in addition to the appropriations made by the Smith-Hughes Act.

The general provisions of the George-Reed Act were similar to those of the Smith-Hughes Act, except that aid was not given to trade and industrial education or for the training of vocational education teachers. The administration and organization of agricultural and home economics education programs under the George-Reed Act were also similar to the requirements of the Smith-Hughes Act, except for the following features: 1) the funds under the George-Reed Act for agricultural education were to be allocated to the states on the basis of farm population instead of rural population as set up under the Smith-Hughes Act; 2) the funds for home economics education given to the states were to be allocated on the basis of rural population instead of urban population; 3) the funds under the George-Reed Act were an authorization whereas the funds under the Smith-Hughes Act were an appropriation; and 4) some minor changes were made in the actual day-to-day administration and organization of home economics education so that this program

would be organized more along the lines of the agricultural education program.

The Smith-Hughes Act carried the provisions for annual grants to continue indefinitely unless Congress decides to do otherwise. It appears, though, that after the passage of this Act and noticeably with the enactment of the George-Reed Act, the attitude of Congress has changed somewhat in regard to grants in perpetuity. The view is taken that because of the fast-moving changes taking place in education and science and technology, the circumstances warranting federal grants-in-aid may change greatly from time to time. Therefore, it was thought wise to subsequently make the federal grants for a specified time, at the termination of such their need could be readily reviewed with the expectation of increasing or decreasing the funds as the circumstances might dictate.

In accordance with this view when the George-Reed Act and many of the subsequent acts relating to vocational education were written, Congress specified that "there is authorized to be appropriated for the fiscal year . . . . (the year in question) and annually thereafter the sum of . . . . (the amount)." Although this wording does authorize the expenditure, it does not appropriate the funds. Additional action on the part of Congress is necessary before the funds for the specified purposes are actually available for expenditure.

George-Ellzey Act

The George-Reed Act expired on June 30, 1934. To insure the continued promotion of the vocational education programs in agriculture, home economics, and trades and industries, Congress passed the George-Ellzey Act in 1934.[10] This Act authorized an appropriation of 3 million dollars annually for vocational education for each of the fiscal years ending in 1935, 1936, and 1937. The authorized amounts were to be divided equally among vocational education and agriculture, in trades and industries, and in home economics. Vocational agricultural and home economics funds were to be allocated to the states on the same basis, farm population, as was provided in the George-Reed Act. The funds for trade and industries education were to be proportioned on the basis of non-farm population of the state. Minimum allotments of $5,000 to each state for each field and funds for administration were also provided. With most of the particulars, the Act was administered and organized in a similar manner to that of the previous Smith-Hughes and George-Reed laws.

George-Deen Act

Vocational education leaders and supporters recognized that the George-Ellzey Act of 1934 would expire in 1937 and that its termination would adversely affect the national program of vocational education. In addition, it

[10]Public Law Number 245, 73rd Congress.

was felt that certain new fields in the area of vocational education needed funds for which none had been previously available. The American Vocational Association petitioned Congress for an extension of the present law and also to provide supplementary funds for new areas of vocational education and training to be covered. In response to the new felt needs of vocational education, Congress passed the George-Deen Act which became effective on July 1, 1937.[11]

The George-Deen Act differed from the two preceding acts by authorizing funds, not just appropriating funds, on a continuing basis. A substantial increase in funds was also made enlarging the amount to 12 million dollars annually to be divided equally among agricultural, home economics, and trade and industrial education. In addition, distributive education was to be included in the federally aided program. Funds of 1.2 million dollars were provided for this type of vocational education and 1 million dollars were allowed for teacher-training in general. Therefore, total funds of about $14.4 million were authorized that included amounts for administration and for minimum allotments to the states. Minimum allotments were provided in the amount of $20,000 annually each for home economics, trade and industrial, agricultural vocational education to the states. For teacher-training programs and distributive education, the minimum amount guaranteed was $10,000 for every state. The coverage of the law included the territories as well as the states.

[11]Public Law Number 673, 74th Congress.

The formula for allotting funds for agricultural education, home economics education, and trades and industries education was to be the same as provided in the George-Ellzey Act. However, the funds for distributive education and for teacher-training programs were allotted to each state and territory in the ratio that the population of the state or territory bore to the total population of the United States and its territories.

A sliding scale was provided for matching federal funds under the Act. The several states and territories were required to match federal funds with state or local funds or both on the following formula: from July 1, 1937, to June 30, 1942, 50 per cent; for the year ending June 30, 1943, 60 per cent; for the year ending June 30, 1944, 70 per cent; for the fiscal year, 1945-1946, 80 per cent; for the fiscal year, 1946-1947, 90 per cent; and 100 per cent annually thereafter.

Distributive education subjects were limited to part-time and evening schools and as specified for home economics and trades and industrial subjects. Also, restrictions were placed on industrial plant training programs. The Act specifically prohibited using vocational education programs as a device for profit-making. Industrial plant training programs had to be for bona fide vocational training.

The George-Deen Act was designed fundamentally to supplement the Smith-Hughes Act and to provide for the further

development of vocational education in the specified fields in the several states and territories. The Act was designed to overcome certain limitations of the Smith-Hughes Act and to add flexibility to the program of federally aided vocational programs. The authorizations of the George-Deen Act were subject in most cases, with one or two exceptions, to the same general conditions and limitations which existed in the previous laws relating to vocational education. The most noticeable change in federal thinking on vocational education as reflected in this law was that the federal government was providing for the first time specific aid for vocational education for those employed in distributive business.

Advisory Committee on Education

President Roosevelt approved the George-Deen Act on June 8, 1936. However, after signing the Act he sent a letter to Congressman Deen, one of the law's co-sponsors, indicating that he signed the bill with some reluctance. He indicated that he wanted to appoint an advisory committee on vocational education to make a study of vocational education and the appropriate role of federal-state cooperation and other associated matters. Acting on this commitment, he appointed an "Advisory Committee" in September of 1936.[12] This committee consisted of 24 members with Dr. Floyd W. Reeves acting as chairman. However, after the committee got

[12]Advisory Committee on Education, Report of the Committee (Washington: Gov't Printing Office, 1938).

into operation, its activities widened and were extended to include the federal role and relationship of all phases and types of education.

A number of staff studies on various aspects of education were prepared by the committee. One of the staff studies was devoted to vocational education. Various references were made in this report to the need for a general revision of the federal laws concerning aid to all types of vocational education. It was recommended that more authority should be granted to the local school administrators because most of the previous legislation had been tightly written, setting out in detail what state and local officials could do and could not do in setting up federally reimbursed vocational education projects. Most of the federal vocational education laws and the regulations of the United States Commissioner of Education are extremely detailed. For example, some of the provisions touch on such matters as the age and kind of students to be enrolled, the space and equipment to be used, the form and content of the curriculum, the grade and level at which the programs are to be conducted, the length of the school year and school week, the qualifications of instructors and administrators, and many other items.[13] Needless to say, vocational education programs on the local level tend to be relatively uniform in all parts

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[13]United States Office of Education, Administration of Vocational Education: Rules and Regulations, Vocational Education Bulletin, No. 1 (Washington: Gov't Printing Office, 1917), revised 1958.

of the country.

It was further suggested that all the federal funds for vocational education of less than senior college grade be consolidated into one single fund and made available for such types of vocational education and vocational guidance as may be seen fit and appropriate by the states. The need for funds for general education was also emphasized. It was suggested that federal appropriations for vocational education should not be increased until a relatively generous allotment of federal funds for general education was made. The report also recommended that the designation of specific grants for vocational education should be discontinued as soon as there was adequate federal appropriation for general unspecified educational purposes. In regard to in-plant training, the Committee stated that safeguards should be increased to prevent the exploitation of youth in this type of training by business and industry.

George-Barden Act

On August 1, 1946, "a bill to amend the George-Deen Act" was put into law. This law, known as the George-Barden Act, authorized increased appropriations for the various vocational education programs as specified in the George-Deen Act.[14] More flexibility in the vocational education programs was permitted under this Act. The expenditure of

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[14]Public Law Number 586, 97th Congress.

some 29 million dollars beyond the perpetual 7.2 million of the Smith-Hughes Act was authorized. Additional annual authorizations were in the amount of 10 million for agricultural education, 8 million each for trade and industrial education and home economics education, and 2.5 million for distributive education. As in the past, vocational agriculture was to receive the top authorization in funds. The coverage of this Act includes what was then the territories of Alaska and Hawaii, the island of Puerto Rico and the District of Columbia as well as the states. The provisions of the George-Barden Act were extended to the Virgin Islands in 1950 and an annual authorization of $40,000 was provided.[15] In 1956, Guam was also included under this Act, and an annual authorization of $80,000 was made for this purpose.[16]

Minimum annual allotments to the states or territories were increased to $40,000 for agricultural, home economics, and trades and industries vocational education. For distributive education, the minimum allotment was to be $15,000 annually. No specific allocation of funds for teacher-training or for vocational guidance was made under the George-Barden Act, but each state vocational education board was permitted to use such amounts of the federal funds under each category for these purposes as it thought was

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[15]Public Law Number 462, 81st Congress.

[16]Public Law Number 896, 84th Congress.

deemed necessary.

Some items not specifically authorized in previous vocational education laws were authorized in the George-Barden Act. These additions included: the salary and expenses of state directors of vocational education, the salaries and travel expenses of vocational counselors, the work-experience training programs for out-of-school youth, and the supervision of Future Farmer and New Farmer Activities.

The chief difference of the George-Barden Act as contrasted with previous vocational education legislation is that of flexibility. Some of the specific limitations on the use of funds and the rigid requirements on the various types and means of vocational education were omitted from this Act. Provisions were allowed for more discretionary action on the behalf of the state and local vocational education school authorities. However, certain activities which had been previously developed under administrative approval were given legislative status under this Act; for example, supervision of the activities of the Future Farmers of America and the New Farmers of America, the further education of teachers of agriculture, and the providing of training programs for apprentices. Except for the above mentioned modifications and several other minor ones, the Act was subject to the same general conditions and limitations as specified in the previous vocational education laws.

A decade later in 1956, legislation known as the Health Amendment Act was passed.[17] This law was to amend the Vocational Education Act of 1946, the George-Barden Act, to include a Title II on vocational education for practical nurse training. Congress authorized an annual expenditure of 5 million dollars which was designated to be used "to extend and improve practical nurse training." Also in 1956, Congress authorized the appropriation of $375,000 for vocational education in the fishing trades and industries and the distributive occupations therein.[18] However, an appropriation of only $180,000 has been made each year. Under the provisions of the Act, amounts were to be apportioned among the states and territories on an equitable basis as determined by the United States Commissioner of Education after consultation with the Secretary of the Interior. The extent of the fishing industry in the United States and its territories was also supposed to be taken into account in the allocation of funds. The program under this law has been substantially developed in only a few of the coastal states.

National Defense Education Act

Congress passed the "National Defense Education Act of 1958" to correct some of the apparent deficiencies in the

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[17]Public Law Number 911, 84th Congress.

[18]Public Law Number 1027, 84th Congress.

educational system which had been brought out by the space race and the defense effort.[19] Title VIII of the Act amended the Vocational Education Act of 1946, the George-Barden Act, by adding to it a Title III, called "Area Vocational Programs." This amendment provided for area vocational education programs to meet national defense need for highly skilled middle-manpower technical personnel and authorized an appropriation of 15 million dollars annually.

With respect to occupational education, two particular problems existed and needed consideration. One was the relatively slow pace at which school districts were consolidating. The many small secondary schools were necessarily restricted in the vocational opportunities they could offer their students. The second problem was that of a desperate shortage of technical personnel, particularly in the engineering and scientific middle-manpower categories. Under the national defense banner, these two needs, better vocational facilities and technical manpower, became linked and evolved as Title VIII of the National Defense Act.

The area concept of vocational education, that vocational schools should be set up to serve more than one school district, had been evolving for a number of years. Efforts had been made to include a provision for such special schools in the Vocational Education Act of 1946, the George-Barden Act. However, that attempt was unsuccessful and so were some

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[19]Public Law Number 864, 85th Congress.

later attempts in the 84th Congress. However, when the sponsors of the National Defense Education Act introduced their legislation, the proposals concerning area vocational education were included and subsequently enacted into law.

Title VIII was originally written with the purpose of training "highly skilled technicians in recognized occupations requiring scientific knowledge . . . in fields necessary for national defense." Title VIII of the Act was placed in the statutes as Title III of the George-Barden Act. This was the first major attempt on the part of the federal government to assist technical education. But by making Title VIII an amendment to the George-Barden Act, Congress made technical education subject to vocational education restrictions. The technical education programs under this law are subject to less-than-college-grade provisions. However, United States Office of Education regulations have made it possible to use Title VIII funds in the technical education programs of two-year colleges. Even with the official definition, problems remain as to what are programs of "less-than-college-grade." If the objectives of the Act were in fact to train "highly skilled technicians" then by their very nature the programs must be to a certain degree of "college grade."

All non-profit institutions open to the public which will accept students from areas currently not adequately served by their vocational education programs and which offer subjects in technical and scientific areas relating to

defense needs are eligible for funds under Title VIII. There are a host of institutions which have used these funds, such as high schools, area vocational schools, vocational schools, technical institutes, junior colleges, four-year colleges, and others.

The most important result of the enactment of the "National Defense Education Act of 1958" has been an increased understanding and appreciation for technical education. Considerable interest had long been in evidence for vocational education, but technical education had been severely neglected.

Area Development Act

A special program was established in 1961 with the passage of the "Area Development Act."[20] Vocational and technical training of unemployed and underemployed persons in recognized redevelopment areas was provided under Section 16 of the Act. Unemployed and underemployed workers in depressed areas were to be trained or retrained for occupations which would offer a reasonable expectation for employment.

The responsibility for determining the occupations for which training and educational programs were to be offered, the persons to be trained or retrained, and to place them after training belonged to the Secretary of Labor. Four and one-half million dollars was authorized for appropriation

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[20]Public Law Number 27, 87th Congress.

annually for four years beginning May 1, 1961, to the Department of Labor. However, funds were transferred to the Department of Health, Education, and Welfare for costs of administration of the training and educational programs and for payments to the states for training costs. One of the special features of this Act was the provision for payment of subsistence benefits to the unemployed during the time they were training. Congress authorized annual expenditures of $10 million for subsistence benefits. They were payable for a maximum of 16 weeks for an amount which was equal to the average unemployment insurance paid in the state where the worker undertook his training. In setting up this special provision, Congress realized that it would be unrealistic to expect an unemployed worker to undergo a training program without any means of subsistence. All costs which were directly attributable to the training were payable from federal funds; states and localities did not make any financial contribution to this program.

Training and education, be it vocational or technical, were to be given by the appropriate state vocational education agency or under its direction except when that agency did not see fit to do so. Then the Secretary of Health, Education, and Welfare had to contract with a public or private educational institution to provide the necessary training and education required of the unemployed or underemployed. Courses could be offered to help workers find gainful

employment in any occupation and, therefore, there were no limitations on the subjects which might be taught providing, of course, that they were in the vocational or technical area.

In the whole picture of vocational-technical education, the Area Redevelopment Act is of little importance. However, it did recognize that vocational-technical education and training was an integral part of the attack on the problems facing distressed areas. The act was of limited importance because the amount of money which was appropriated under it for training purposes was relatively small, the funds were restricted to designated redevelopment areas, and subsistence allowances for the training period were to run for no longer than sixteen weeks. Many of the training programs under the original Area Redevelopment Act have now been put under the Manpower Development and Training Act.

Manpower Development and Training Act

The "Manpower Development and Training Act" was passed in 1962 by Congress.[21] Since its enactment in 1962, it has been amended on five different occasions.[22] The law was originally passed against a background of high unemployment, a growing labor force and widening impact of technological

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[21] Public Law Number 415, 87th Congress.

[22] Public Law Number 729, 87th Congress; Public Law Number 214, 88th Congress; Public Law Number 15, 89th Congress; Public Law Number 792, 87th Congress; Public Law Number 794, 89th Congress.

change in employment. Since its original enactment, there has been a gradual improvement in the employment process for the general population, but persistently high unemployment rates continue to exist for many special worker categories, including teenagers, non-whites, older workers, and the unskilled.

The Manpower Development and Training Act set up a nationwide program for the training and retraining of the unemployed and the underemployed. It also authorized a broad program of research on manpower and automation problems. Therefore, it is well to say that this Act represents one of the most important advances in the development of a national manpower policy since the passage of the "Employment Act of 1946."

The "Statement of Findings and Purpose" of the Act states that:

> Congress finds that there is a critical need for more and better trained personnel in many vital occupational categories, including professional, scientific, technical and apprenticeable categories; that even in periods of high unemployment, many employment opportunities remain unfilled because of the shortages of qualified personnel, and that it is in the national interest that current and prospective manpower shortages be identified and that persons who can be qualified for these positions through education and training be sought out and trained as quickly as is reasonably possible, in order that the Nation may meet the staffing requirements of the struggle for freedom. The Congress further finds that the skills of many persons have been rendered obsolete by dislocations in the economy arising from automation or other technological developments, foreign competition, relocation of industry, shifts in market demands, and other changes in the structure of the economy; that Government leadership is necessary to

> insure that the benefits of automation do not become burdens of widespread unemployment; that the problem of assuring sufficient employment opportunities will be compounded by the extraordinarily rapid growth of the labor force in the next decade, particularly by the entrance of young people into the labor force, that improved planning and expanded efforts will be required to assure that men, women, and young people will be trained and available to meet shifting employment needs; that many persons now unemployed or underemployed, in order to become qualified for re-employment or full-employment be assisted in providing themselves with skills which are or will be in demand in the labor market; that the skills of many persons now employed are adequate to enable them to make their maximum contribution to the Nation's economy; and that it is in the national interest that the opportunity to acquire new skills be afforded to these people with the least delay in order to alleviate the hardships of unemployment, reduce the costs of unemployment compensation and public assistance, and to increase the Nation's productivity and its capacity to meet the requirements of the space age. The Congress further finds that many professional employees who have become unemployed are in need of refresher or reorientation educational courses in order to become qualified for other employment in their professions, where such training would further the purposes of this Act. It is therefore the purpose of this Act to require the Federal Government to appraise the manpower requirements and resources of the Nation, and to develop and apply the information and methods needed to deal with the problems of unemployment resulting from automation and technological changes and other types of persistent unemployment.[23]

The Manpower Development and Training Act consists of two basic sections. The first part authorizes the Secretary of Labor to undertake a broad program of evaluation, information, and research on the many aspects of manpower requirements, resources, utilization, and training. A similar provision was included in the Smith-Hughes Act

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[23]Public Law Number 415, 87th Congress, Title I, § 101, as amended.

of 1917. However, nothing of importance resulted from that provision. But much attention is being put on this section of the Manpower Development and Training Act. It is hoped that it will provide much needed knowledge about the labor force and its problem. The Office of Manpower Policy, Evaluation, and Research has been designated to supervise and direct the varied research programs called for by the Act. Information such as job skill requirements, occupational outlook, job opportunities, labor supply in various skills, and employment trends, is being made available. This information is to be used in the education training, counseling, and placement activities performed under the many programs of the Act. This information is also very important for planning and for vocational guidance in schools, in public and private employment offices, in business and industry, and in labor organizations. The past discussions on manpower problems were often highlighted by the various gaps in the current information available on labor force characteristics and problems. This separate section (Title I on the Act) should do much to improve this situation.

The second section (Title II) of the Act deals with training and skill development. It is generally considered to be the most important part of the Act. This section calls for a program of direct action to upgrade the skills and adaptability of the labor force and, therefore, to link men with

jobs more effectively. A program of institutional and on-the-job training to prepare workers for job opportunities that have been found through job market surveys and other similar means was authorized. In addition, basic educational training was authorized for people who need job training, but cannot benefit from it until they have further training in the basic education skills. The program is to be nation-wide, not just in chronically depressed areas as was the case with the programs set up under Sections 16 and 17 of the Area Redevelopment Act.

This program is to be administered jointly by the Manpower Administration's bureau of Employment Security and the Department of Health, Education, and Welfare. The Bureau of Employment Security's responsibilities are carried out through its national and regional offices and its affiliated state employment security offices. The training responsibilities of the Department of Health, Education, and Welfare are carried out by the Office of Education's regional offices, state educational agencies, and local public training agencies.

There are four categories of workers who are eligible to receive training. They are: unemployed workers (this includes members of farm families with less than an annual net family income of $1,200), people who are working substantially less than full-time, people who will be working less than full-time or will be unemployed because their skills

are obsolete or will become obsolete, and persons working below their skill capabilities. However, before training is attempted it must be determined that these workers cannot reasonably expect to get appropriate full-time employment without such training. And also, there must be a reasonable expectation for employment by the worker in the occupation for which he is being trained.

Training programs may be set up to provide for skills in short supply locally or outside the area. The roster of occupational titles for which a person can be trained currently numbers over 700. The training may be conducted in classrooms, the traditional approach, or it may be conducted on the job, or the two approaches may be combined to be used within one training course. Currently, in these training programs, great emphasis is given to on-the-job training. Persons are hired as employees and trained on the job site by fellow workers or special instructors.

Basic education was included in the Manpower Development and Training Act programs by an amendment in 1963. Training was authorized in basic education skills for persons needing such to profit from the regular occupational training. This type of education usually involves reading, writing, language skills, and arithmetic and is given jointly with the occupational training.

The Act, as amended, continues the Manpower Development and Training Act programs until June 30, 1969. Under

the Act, there is no cost to the trainees for training. Prior to June 30, 1966, the federal government paid 100 per cent of the operating costs of the various training and educational projects, but after that date the state governments have to pay 10 per cent of the training costs. However, costs may be matched "in kind." Funds of $454 million were authorized for the fiscal year ending June 30, 1964, and for each fiscal year thereafter such amounts as may be necessary. If a state reduced its outlays for vocational education and training, including program operations under provisions of the Smith-Hughes Vocational Education Act, Titles I, II, and III of the Vocational Education Act of 1946, and the Vocational Education Act of 1963, because of this federal assistance, it will not be able to qualify any longer for funds under the Manpower Development and Training Act. All fifty states, the District of Columbia, Puerto Rico, the Virgin Islands, and Guam are all eligible for these federal funds.

The Manpower Development and Training Act program has been successful in correcting many of the imbalances in matching labor force skills with labor force needs.[24] Primarily these programs have been directed toward solving immediate occupational problems. Sufficient flexibility has

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[24]United States Department of Labor, Manpower Report of the President and A Report of Manpower Requirements, Resources, Utilization and Training, 1967 (Washington: Gov't Printing Office), p. 97.

been given to the program to allow it to focus on both "human reclamation" and "remedying" skill shortages. One of the shortcomings of the program, though, is that very few of the trainees are preparing for work in the sub-professional scientific and technical fields where career opportunities are brightest. Instead there has been more concentration on the semi-skilled and skilled blue-collar and clerical occupations where long-run prospects are somewhat questionable. Despite many handicaps inherent in a type of training and educational program such as this, it has proved to be a very bold and imaginative piece of legislation filling in part of the gaps which exist in our educational system. It has succeeded in bringing out the problems of men, education, and work to the national forefront. What it has been able to do and what it has not been able to do have pointed out the critical need for greater vocational and technical education and training orientation within our education system, both secondary and post-secondary.

Panel of Consultants on Vocational Education

As a result of the attention given to vocational-technical education, President Kennedy said on February 20, 1961, in his message to the Congress on American Education that:

> The National Vocational Education Acts, first enacted by the Congress in 1917 and subsequently amended, have provided a program of training for industry, agriculture, and other occupational areas. The basic purpose of our vocational education effort is sound and sufficiently

> broad to provide a basis for meeting future needs. However, the technological changes which have occurred in all occupations call for a review and re-evaluation of these acts, with a view toward their modernization.
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> To that end, I am requesting the Secretary of Health, Education and Welfare to convene an advisory body drawn from the educational profession, labor, industry, and agriculture, as well as the lay public, together with representatives from the Department of Agriculture and Labor to be charged with the responsibility of reviewing and evaluating the current National Vocational Education Acts, and making recommendations for improving and redirecting the Program.[25]

Benjamin C. Willis, Superintendent of the Chicago schools, served as chairman and J. Chester Swanson, Professor of Education at the University of California, served as staff director of this "Panel of Consultants on Vocational Education." The panel also consisted of twenty-four other members, the majority of them being vocational educators. However, representatives from labor, agriculture, business, government, press, and education were included. The panel presented its report in November 1962 and the full report, Education for a Changing World of Work, was published in the spring of 1963.[26]

The panel recommended that a greatly improved and expanded program of vocational and technical education on both the secondary and post-secondary level was needed. It was felt that federal appropriations should be increased to

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[25]United States Office of Education, Education for a Changing World of Work--Report of the Panel of Consultants on Vocational Education (Washington: Gov't Printing Office), p. 97.

[26]Ibid.

$400 million from the then present $57 million. Instead of following the traditional occupational categories as specified in the past vocational legislation, the panel recommended that a new federal-state cooperative program be directed to five major areas of service: 1) High school youth. The current vocational programs should be expanded and improved. Pre-employment courses in office, distributive, agriculture, and trades and industries occupations should be broadened with the assistance of $200 million. 2) High school age youth with academic, socio-economic, and other handicaps. For these youth, special individualized programs of instruction and guidance should be set up with new demonstration, experimental, and pilot projects to introduce new approaches and ideas to handle these special problems. A $10 million investment was recommended. 3) Post-secondary opportunities. Post-high school full-time vocational and technical education should be enlarged and upgraded with more federal funds to provide youths and adults with more opportunities for the individual to fully realize himself. Specialized vocational schools in large urban areas and area vocational schools were particularly recommended because of their ability to train highly skilled craftsmen and technicians. An amount of $50 million was indicated as a minimum amount to underwrite this recommendation. 4) The unemployed and underemployed. There should be made available for the unemployed and underemployed youths

and adults part-time and full-time short-term training and retraining courses so that employment stability could be achieved for them. Federal funds of $100 million were suggested for this need. 5) Services to maintain and assure quality. So that teacher competence, instructional materials, occupational counseling and guidance, research and evaluation, and so forth, could be available and maintained, total federal funds of $10 million should be made available for this need.

The panel felt that vocational education programs had not been realistic in terms of current and prospective labor force requirements and that the programs of instruction and training should be more carefully correlated with these requirements in the future. It also felt that much of the previous vocational education legislation had been "patchwork" and that even though the federal government was greatly involved in supporting education, too small a proportion of federal expenditures were being allocated to vocational and technical education.

Vocational Education Act of 1963

In response to these recommendations and because of a wide felt need for improved vocational education, the "Vocational Education Act of 1963" was passed. It was the first major overhaul of the vocational education system since the passage of the George-Barden Act of 1946 and the most important in the legislative history of vocational

education since the passage of the Smith-Hughes Act in 1917.

The basic philosophy of the Act is that all citizens--from the least able and the disadvantaged to those with high abilities--should have access to appropriate education and training which is of high quality and realistic in terms of employment opportunities. Following the recommendations of the panel, the Act authorized increased federal aid for programs designed to meet the needs of four groups: 1) high school youth; 2) those who have completed or dropped out of high school and are available for full-time study; 3) workers who need training or retraining to hold their jobs or qualify for advancement; and 4) disadvantaged people needing special training programs. In addition, funds were also provided for construction of area vocational schools and for special services, such as teacher training and vocational guidance.

Another important section of the Act required that 10 per cent of the funds appropriated for permanent programs must be used for research and training and for experimental and demonstration projects which are designed to meet the special needs of vocational education for youths, especially those with academic, socio-economic, and other handicaps and those in depressed areas. In addition, the Act requires that 3 per cent of each state's allotment of funds must be used for such purposes as training and supervision of teachers, development of instructional materials, and

evaluation of programs. Hopefully, these requirements will improve the quality of vocational education and develop new and more flexible programs to meet the needs of all individuals who depend on vocational education for their formal job training.

One of the Act's pioneering provisions is that vocational education programs must be closely geared to the changing manpower needs. This is of special importance from the policy viewpoint of manpower development. Several of the older vocational education acts were amended by this Act, and some of these amendments drastically changed some of the rigid requirements that were a part of these acts. For example, as labor market realities dictate, a state may transfer funds from one prescribed occupational program to another as vocational education demands change. Thus, urban states may direct funds from vocational agricultural programs to trade or technical programs. In fact, funds may be expended for any program designed to fit individuals for gainful employment. Therefore, the states have a much greater prerogative in setting up their own programs. The intent of the Act was to foster flexibility, adaptability, and experimentation in a vocational education effort geared to technological change.

To insure that vocational education keeps abreast of labor market realities, the new legislation stipulates that: 1) the state vocational education programs must be run in

cooperation with public employment services; 2) the various state boards for vocational education must review their use of current and projected manpower needs of the state; 3) an advisory committee must independently review the various national programs to see if they are relating to actual training requirements and report to the United States Commissioner of Education; 4) the Act required that in 1966, and for every five years thereafter, a panel was to be appointed to make recommendations to Congress for improvements which might be made in the Act.

The Vocational Education Act of 1963 authorized $60 million for fiscal 1964, $118.5 million for fiscal 1965, $177.5 million for fiscal 1966, and $225 million for all succeeding years. Fifty-fifty matching on the part of the states is currently required in the use of all these federal funds. The above authorizations are in addition to any funds still in existence under older legislation.

The area vocational school movement should be aided with the provisions of this Act. Technical education should also benefit from these schools. With the elimination of the provisions in many of the older acts which required aid to be given categorically to certain occupational training programs, more flexibility will result, allowing programs to be based more directly on labor market needs. The great expansion and strengthening of vocational and technical education provided for by the Vocational Education Act of 1963 should result in major advances in manpower development.

Higher Education Facilities Act of 1963

To assist the nation's institutions of higher education to accommodate mounting student enrollments and to meet the demand for skilled technicians and advanced graduate education, Congress passed the "Higher Education Facilities Act" in 1963.[27] Under Title I of the Act, $230 million was authorized for undergraduate academic facilities with 22 per cent of that sum being earmarked for post-secondary technical institutes, public community colleges, and two-year branches of colleges and universities. The other 78 per cent was to go to other public institutions of higher education.

Similar to Title VIII of the National Defense Education Act of 1958, occupational education and training programs are limited to those in science, engineering, and related technologies. However, the Higher Education Facilities Act is a very important development for post-secondary technical education in that this bill gives recognition to technical education's importance within higher education and to the economy. Technical education now enjoys a definite Congressional endorsement as a necessary and legitimate part of higher education and, in fact, a part which needs to receive high priority. For occupational training below the baccalaureate level, this means that a gap has been closed.

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[27]Public Law Number 204, 88th Congress.

National Vocational Student Loan Insurance Act

To further financial assistance for vocational education students, Congress passed the "National Vocational Student Loan Insurance Act" in 1965.[28] The purpose of this Act was to encourage vocational and technical schools to establish student loan programs. Under this Act, loans of up to $75 million were approved for the fiscal year ending June 30, 1966, and each succeeding year.

The various federally assisted vocational and technical programs now in force indicate that the whole spectrum of sub-professional occupational training and education, secondary and post-secondary, as well as general education and traditional programs are being integrated so that a complete program of vocational-technical education and training exists. Federal-state cooperative programs now cover the entire vocational-technical occupational spectrum.

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[28]Public Law Number 287, 89th Congress.

CHAPTER IV

OKLAHOMA INSTITUTIONS, LAWS, AND POLICIES WHICH RELATE TO VOCATIONAL AND TECHNICAL EDUCATION

The purpose of this chapter will be to summarize the various institutions, facilities, laws, and policies which relate to vocational and technical education in Oklahoma. The institutions in the Oklahoma state system of higher education will be briefly reviewed first, then the various vocational and technical education programs which are available will be summarized, and following that the current Oklahoma state policies affecting vocational and technical education will be discussed. Applicable laws will be discussed as they refer to the appropriate facility or policy. Vocational and technical education on the post-secondary level will be our primary concern in this chapter.

The University of Oklahoma

The first legislative Assembly of the territory of Oklahoma established the University of Oklahoma on December 19, 1890. The "object" of this institution was to be:

> to provide means of acquiring a thorough knowledge of the various branches of learning connected with scientific, industrial, and professional pursuits, in the

> theory and art of teaching, and also in instruction in the fundamental laws of the United States and of this territory.[1]

In summary, the University of Oklahoma was assigned the task of producing scientific, industrial, and professional personnel, school teachers, and good citizens.

The Board of Regents of the University of Oklahoma is the governing board for this institution and its three constituent agencies which are administered by the University, namely, the School of Medicine, the University hospitals, and the Geological Survey. This board was created by constitutional amendment.[2] The powers and duties of the board are prescribed by the legislature and are set in the Oklahoma Statutes.[3]

This institution is basically not concerned with vocational or technical education and does not at the present time offer any specific programs in trade and industrial training. Terminal programs, however, are effected in business. The University of Oklahoma Medical Center trains a variety of technical and vocational personnel in allied medical fields. The number of programs currently underway is six.

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[1]Oklahoma State Regents for Higher Education, Goals for Oklahoma Higher Education, Self-Study of Higher Education in Oklahoma--Report 8 (Oklahoma City: Oklahoma State Regents for Higher Education, 1966), p. 5.

[2]Oklahoma Constitution, art. XIII, § 8.

[3]House Bill 810, § 305, Session Laws, 1965.

Oklahoma State University

On December 25, 1890, the legislative assembly of the territory of Oklahoma established the Agricultural and Mechanical College of the Territory of Oklahoma. It was later called Oklahoma A & M College and is currently called Oklahoma State University. This institution was established under the provisions of the Merril Act of 1862. Therefore, the original purposes of this higher education institution were "more practical" as opposed to being "more classical or cultural." The Merril Act states that such institutions:

> shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the State may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life.[4]

The Board of Regents of Oklahoma Agricultural and Mechanical Colleges is the governing board for Oklahoma State University and Panhandle A & M College, Langston University, Northeastern Oklahoma A & M College, Connors State Agricultural College, Eastern Oklahoma A & M College, Murray State Agricultural College, and Cameron State College. This board was created by an amendment to the state constitution.[5] The legislature has prescribed the duties of the board, and they are found in the Oklahoma Statutes.[6]

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[4]Oklahoma State Regents for Higher Education, op. cit., p. 6.

[5]Oklahoma Constitution, art. VI, § 31a.

[6]House Bill 810, § 412, Session Laws, 1965.

Besides the main university itself, Oklahoma State University operates the Agricultural Experiment Station, the Agricultural Extension Division, and the College of Veterinary Medicine, and two branches which are located off campus. They are Oklahoma State Tech at Okmulgee and the Technical Institute in Oklahoma City. Oklahoma State Tech was organized on October 1, 1946. This institution will be discussed in more detail in Chapter V.

The Oklahoma City branch of Oklahoma State University Technical Institute was established in September of 1961. It is a cooperative project among Oklahoma State University, the Oklahoma City Public Schools, the State Board for Vocational Educations, and Oklahoma City University. It is a part of the College of Engineering of Oklahoma State University. In addition, there is a Technical Institute on the main campus at Stillwater. It is a part of the College of Engineering. These three organizations, Oklahoma State Tech and the two technical institutes of the College of Engineering, carry out the vocational and technical education programs of Oklahoma State University. Also, a terminal two-year business program in secretarial science is carried out through the College of Business at Stillwater.

Programs which are designed to prepare technicians for engineering-related occupations are operated by Oklahoma State University primarily at two locations--at the Oklahoma State University branch in Oklahoma City and on the main

campus at Stillwater. A total of eleven different technical programs are offered in such fields as aeronautical technology, civil technology, construction technology, drafting and design technology, electrical technology, electronics technology, environmental control technology, fire protection technology, instrumentation and process control technology, mechanical technology, and metals technology. The Stillwater campus operates eight separate programs and the Oklahoma City branch has six different programs. Students in these programs receive an Associate Degree in Technology.

The Oklahoma institution which offers the most complete range of vocational and technical education courses is Oklahoma State Tech. Over forty different specialities can be pursued. However, most of the courses are oriented towards vocational education. Only four programs exist in technical education. They are drafting and design, engineering aid, data processing technology, and electronics technology. A Certificate of Accomplishment is awarded to the student on finishing the appropriate work for each program.

Oklahoma Colleges

There are six institutions in the Oklahoma state system of higher education which are referred to as state colleges. They are Central State College at Edmond, started on April 6, 1890; Northwestern State College at Alva, started on March 12, 1897; Southwestern State College at Weatherford, started on March 8, 1901; Northeastern State College at Talequah,

started on March 6, 1909; East Central State College at Ada, started on March 25, 1909; and Southeastern State College at Durant, started on March 28, 1909.

The governing board of all these institutions is the Board of Regents of Oklahoma Colleges. This board resulted from an amendment to the state constitution.[7] Its legal powers and duties are prescribed by the legislature and are stated in the Oklahoma Statutes.[8]

These institutions were originally structured as normal schools, created for the express purpose of furnishing teachers for the common schools of the territory and the state. The chief activity of these six institutions is still the production of teachers for public schools. However, their function has broadened somewhat and they have become multipurpose institutions. All of these institutions currently offer some trade and industrial training courses.

Langston University

Langston University was established by the territorial legislature on March 12, 1897, to serve as a combination university and normal school for the Negro race.

> The colored Agricultural and Normal University of the Territory of Oklahoma is hereby located and established at or within a convenient distance from Langston in Logan County, Oklahoma Territory; the exclusive purpose

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[7]Oklahoma Constitution art. XIII-B, § 1.

[8]House Bill 810, § 510, Session Laws, 1965.

> of which shall be the instruction of both male and female colored persons in the art of teaching various branches which pertain to a common school education and in such higher education as may be deemed advisable, and the fundamental laws of the United States in the right and duties of citizens and in the agricultural, mechanical, and industrial arts.[9]

Langston University is under the Board of Regents for Oklahoma Agricultural and Mechanical Colleges. Although its functions have not officially changed, it is currently contributing most in the area of teacher education and basic liberal arts. As these two fields have increased in importance, the functions of agricultural and mechanical arts have decreased accordingly. At the present time, Langston University offers some trade and industrial training programs, including brick masonry, carpentry, electronics technology, shoe repair, and woodworking.

Panhandle A & M College

Panhandle A & M College at Goodwell was established on June 10, 1909, by the Oklahoma legislature. Its original purpose was to prepare high school students for entrance into the Oklahoma A & M College and the State Normal schools. Later its function was changed to allow the institution to teach two years of college work in agricultural and mechanical arts, home economics education, and other auxiliary subjects, in addition to its secondary subjects. At the present time it is a four-year institution. Its governing body is the Board

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[9]State Regents for Higher Education, op. cit., p. 7.

of Regents for Oklahoma Agricultural and Mechanical Colleges.

Because Panhandle A & M College is isolated somewhat geographically, it also serves as an area junior college, a liberal arts college, and as a teacher education institution. Most of the current graduates are either in liberal arts or in teacher education. Graduates in agriculture are a very small minority. In the area of trade and industrial education, programs are offered in electronics technology and data processing technology. Both of these are two-year terminal programs.

Oklahoma College of Liberal Arts

The institution now known as the Oklahoma College of Liberal Arts was founded on March 27, 1909. It is located at Chickasha. The original purpose of this instition was to:

> give instruction in industrial arts, the English language and the various branches of mathematical, physical, natural, and economic sciences, with special reference to their applications in the industries of life.[10]

The apparent intent of the first Oklahoma legislature was to establish at Chickasha a female institution equivalent to the Agricultural and Mechanical College at Stillwater.

The function of the institution was changed in 1965 whereby both men and women students would be admitted to pursue four years of study in liberal arts that would culminate in a bachelor's degree. The Regents of the Oklahoma College of Liberal Arts is the governing body of this institution.

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[10]State Regents for Higher Education, op. cit., p. 9.

The powers and duties of this board are set up in the act which created this board.[11]

The Oklahoma College for Liberal Arts currently awards the Associate in Technology in Technical Chemistry. Beyond this the Oklahoma College for Liberal Arts offers little in the way of trade and industrial training and education, except for the terminal program in business.

Northern Oklahoma College

The institution which has since become known as Northern Oklahoma College at Tonkawa was founded on March 8, 1901. The original purpose of this institution was that it should provide secondary instruction for the students of Oklahoma which would prepare them for a university course of study.

The original objectives of this school were changed in 1919 to emphasize training in vocational areas, particularly in the field of business education, and it became known as Oklahoma State Business Academy. A college department was started in 1920 and subsequently the institution was transferred from secondary to college status. In 1941, its name was changed to Northern Oklahoma Junior College, and in 1965 it was changed to Northern Oklahoma College. Associate degrees are awarded in arts, commerce, and science. Some trade and industrial education courses are offered. They

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[11]Senate Bill 161, § 606 Session Laws, 1965.

include specialized courses in electronics technology and data processing. Both of these technical education programs are terminal. This institution has its own governing body. It is the Board of Regents of the Northern Oklahoma College. Its legal powers and appropriate duties are set forth in the act which created this board.[12]

Murray, Connors, and Cameron State Agricultural Colleges

Three agricultural and mechanical colleges were established on May 20, 1908. They are Murray State Agricultural College at Tishomingo, Connors State Agricultural College at Warner, and Cameron State Agricultural State College at Lawton. All three of these institutions are under the jurisdiction of the Board of Regents for Oklahoma Agricultural and Mechanical Colleges.

Agricultural and mechanical arts programs have decreased in importance and university-parallel programs have increased in importance at these three institutions. All three of these institutions currently offer several technical and vocational education programs.

There are five two-year terminal technical education programs at Cameron State College. They are drafting and design, electronics, chemicals, instrumentation, and data processing. Technical education students receive an Associate in Arts Degree upon graduating from this school.

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[12]House Bill 810, § 703, Session Laws, 1965.

Connors State Agricultural State College offers two-year terminal education programs in industrial drafting and electronics technologies. Students of these technical education programs receive an Associate in Arts Degree upon completion of these specialized programs.

Murray State Agricultural College offers only one two-year terminal technical education program. It is in industrial drafting. Students receive an Associate in Science Degree after completing this program.

Eastern Oklahoma A & M College

The institution now known as Eastern Oklahoma A & M College was established on May 28, 1908. It is located at Wilburton. This institution is under the Board of Regents for Oklahoma Agricultural and Mechanical Colleges.

The school was originally created as a four-year institution having as its purpose the teaching of mining and metallurgy. However, at the present time its primary purpose is that of an agricultural and mechanical arts college.

Eastern Oklahoma A & M College offers technical education programs in civil and highway technology, drafting and design technology, electronics technology, electrical technology, industrial chemical technology, and data processing technology. Upon the completing the requirements for these two-year terminal programs, students receive an Associate in Arts Degree.

Northeastern Oklahoma A & M College

Northeastern Oklahoma A & M College was established on March 17, 1919. It is located at Miami. It was originally conceived to be a school of mines. At the present time it is an agricultural and mechanical arts college. It is under the jurisdiction of the Board of Regents of Oklahoma Agricultural and Mechanical Colleges.

It offers technical education programs in electronics technology, industrial drafting, mechanical technology, data processing, and industrial chemistry. Graduates of these two-year terminal technical education programs receive the Associate in Arts Degree on completion of the prescribed program.

Oklahoma Military Academy

On March 25, 1909, the Eastern University Preparatory School at Claremore was founded. It was to prepare students for university work. In 1919, it was changed to Oklahoma Military Academy. Its revised purposes were to be vocational and military training. Vocational education was to be confined to building trades and auto mechanics. The purposes of this institution remains somewhat the same today; however, the vocational training curriculum has been de-emphasized with more emphasis put on the military science program. Oklahoma Military Academy has its own governing board, the Board of Regents of the Oklahoma Military Academy. Its duties and legal powers are stated in the act which created the board.[13]

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[13]House Bill 810, § 806, Session Laws, 1965.

The Municipal Junior Colleges

Oklahoma maintains five municipal junior colleges as part of its public system of higher education in addition to the eighteen state supported colleges and universities. The junior colleges are at Altus, El Reno, Poteau, Sayre, and Seminole. They are under the control of the local school boards and are supported in part by local ad valorem taxes and in part by tuition charged the students.[14] These junior colleges are not a part of the state system of higher education and, therefore, do not share in state appropriated funds. They are, however, eligible to receive federal matching funds in support of related technical programs.

The functions of the municipal junior colleges closely resemble those of the state supported junior colleges. Both of these groups of higher education institutions are chiefly concerned with those students who plan to transfer to senior colleges and universities to complete their education. Therefore, they offer relatively little in the way of vocational and technical training and education.

Sayre Junior College offers a terminal two-year technical training program in electronics technology and drafting. Students receive an Associate in Applied Science Degree upon completion of the specified course requirements. Poteau Junior College offers terminal two-year technical programs in

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[14] Oklahoma Statutes, Title 70, Art. 1, § 7.

chemical technology, electronics technology, and drafting. Students receive an Associate in Arts Degree for completing these courses.

Oklahoma State Regents for Higher Education

On March 11, 1941, the people of the state of Oklahoma adopted an amendment to the state constitution which established the Oklahoma State System of Higher Education.[15] The amendment states that "All institutions of higher education supported wholly or in part by direct legislative appropriations shall be integral parts of a unified system to be known as The Oklahoma State System of Higher Education."[16]

Programs of study, standards of education, and finances are coordinated at the state level. The coordinating board of control which has responsibility for providing this leadership is vested in the Oklahoma State Regents for Higher Education. However, the operation and management responsibility for each institution is vested in each school's governing board of regents.

Higher education is defined, ". . . to include all education of any kind beyond or in addition to the twelfth grade or its equivalent as that grade is now generally understood and accepted in the public schools of Oklahoma."[17]

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[15] Oklahoma Constitution, art. XIII.

[16] Ibid., § 2.

[17] Ibid., § 1.

Table 5 contains the terminal vocational and technical programs of instruction currently offered in Oklahoma public colleges and universities. Programs offered at the two technical institutes operated by Oklahoma State University, located at Oklahoma City and on the main campus, and Oklahoma State Tech are not included in this table.

In addition to the post-secondary programs discussed above, terminal occupational programs are available in Oklahoma in eleven proprietary business schools, twelve schools of practical nursing, seven barber schools, twenty-three airplane flight schools, fifty-one schools of cosmetology, and seven private trade and industrial schools. Approximately one-hundred proprietary schools are currently operating in Oklahoma which are recognized by some official agency of the state or national government, or by a national specialized accrediting agency.[18]

Student Enrollment in Technical and Vocational Education in the Oklahoma State System of Higher Education

Of the 71,982 students who were in the Oklahoma state system of higher education during the fall semester of 1966, 4,377 or 6.1 per cent were technical or vocational students.

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[18] Oklahoma State Regents for Higher Education, Higher Education Opportunities and Needs in Oklahoma, Self-study of Higher Education in Oklahoma--Report 7 (Oklahoma City: Oklahoma State Regents for Higher Education, 1965), p. 58.

TABLE 5

VOCATIONAL AND TECHNICAL TERMINAL PROGRAMS OF INSTRUCTION AVAILABLE AT PUBLIC OKLAHOMA DEGREE GRANTING INSTITUTIONS

Curriculum	OU	OSU	OCLA	LU	CSC	ECSC	NWSC	SWSC	SESC	NESC	Cameron	Connors	Eastern	Murray	NEOAMC	NOC	Panhandle A&M	Altus	El Reno	Poteau	Sayre
Agriculture												x	x	x	x						
Auto Mechanics											x		x							x	
Brick Masonry				x																	
Business	x	x	x		x	x	x	x	x	x	x	x	x	x	x				x		
Carpentry				x									x								x
Chemical Technology			x								x		x		x					x	
Communication Skills															x	x					x
Data Processing											x	x	x		x	x					
Electronics Technology				x							x	x	x		x	x	x	x		x	x
Environmental Control Technology											x				x						
Funeral Service Education[a]					x																
Furniture Construction													x								
Home Economics												x		x							
Industrial Arts, General															x						x
Industrial Drafting and Design											x	x	x	x	x					x	x
Linotype Operator																x					
Machinist															x						
Mechanical Technology											x		x		x						
Nursing and Allied Fields	x														x						
Printing and Printing Composition																x					
Shoe Repair				x																	
Welding											x		x		x						
Woodworking				x											x					x	

Source: State Regents for Higher Education: Higher Education Opportunities and Needs in Oklahoma, Self-Study of Higher Education in Oklahoma--Report 7, (Oklahoma City: Oklahoma State Regents for Higher Education), 1965, p. 53.

[a] Three year program. All other programs listed are one and two years' duration.

Of these 4,377 students, 3,172 or 72.5 per cent were classified as special students, 719 or 16.4 per cent were freshmen level students, 443 or 10.1 per cent were sophomore level students, 24 or 0.5 per cent were junior level students, and 19 or 0.4 students were senior level students.[19] The majority of these are Oklahoma State Tech students since the students there are not classified by conventional college level grades. They are, rather, classified according to how many semesters they have been in attendance, and, therefore, according to the Oklahoma State Regents for Higher Education's records, they are classified as special students.

Division of Vocational Education of the State Department of Education of Oklahoma

The various institutions in the state system of higher education offering vocational and technical education are under the jurisdiction of their various boards of regents. They, in turn, are responsible to the State Regents for Higher Education. Funds for these institutions are primarily from student tuition and state appropriated funds allotted through the State Regents for Higher Education.

The Division of Vocational Education of the State Department of Education also provides financial and other assistance to these schools in support of their vocational

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[19] Enrollments in Higher Education in Oklahoma, 1966 (Oklahoma City: Oklahoma State Regents for Higher Education, 1966), p. 19.

and technical education programs. In 1965, these institutions received about $364,205 of their total state appropriations through this division in support of their vocational and technical education programs. Of this amount, about $21,224 or 5.8 per cent were state funds and about $342,981 or 94.2 per cent were federal funds.[20]

The Division of Vocational Education provides assistance to these institutions in setting up new programs of instruction. It also acts as a supervisory board to insure the fulfillment of these programs.

This division acts as the cooperative agency in dealing with the federal government in regard to the various vocational and technical education laws which were discussed in Chapter III. Federal funds are not received directly by the various institutions, but rather they are received through this office and then disbursed to the appropriate institutions.

Two state agencies are actually involved in the various post-secondary vocational and technical education programs in the state system of higher education in Oklahoma, the State Regents for Higher Education and the respective boards of regents and the Division of Vocational Education of the State Department of Education. To reduce inefficiencies and to

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[20]Thirty-First Biennial Report of the State Department of Education of Oklahoma (Oklahoma City: State Board of Education of Oklahoma, 1966), p. 204.

centralize control and responsibility, it would seem appropriate for the various duties and responsibilities to be placed under the auspices of one agency.

CHAPTER V

ANALYSIS OF OKLAHOMA STATE TECH

General Information

For many years, it had been felt that a special institution offering vocational and technical education in Oklahoma was needed to fill a void which existed in the total educational system in the state. Following the tremendous expansion in education problems resulting from the national education programs for veterans, Oklahoma State University organized the Okmulgee Branch, School of Technical Education, on October 1, 1946, to serve in the area of vocational and technical education and training. The school has since become known as Oklahoma State Tech.

Oklahoma State University serves Oklahoma State Tech in a supervisory and advisory capacity in certain phases of the administration of the school's policy where co-ordination of policy is necessary. The Board of Regents of Oklahoma State University is the governing body of Oklahoma State Tech. To a great extent Oklahoma State Tech operates as a separate educational unit with matters of general administration under the jurisdiction of the Director of Oklahoma State Tech.

Oklahoma State Tech was initially designed to provide a vocational and technical education program for the student who had the initiative and talent to become a highly skilled craftsman or industrial technician. Oklahoma State Tech is designed to serve those areas of industrial work lying between the semi-skilled crafts and the engineer. The school is described as "bridging the gap between the semi-skilled and highly scientific professions." The basic knowledge, techniques, and skills which are needed for each specific occupation are emphasized. The ultimate objective of each vocational or technical course is the successful employment of each student in industry.

According to the past school bulletins, the school is designed to serve the following people:

1) Persons who do not desire to devote four years to the acquisition of an academic degree, but who desire specialized training in a field of their special interest.

2) Persons who have selected their vocations and have acquired some practical experience, but feel the need for further specialized training for advancement in these fields.

3) Persons who possess the interest, aptitude, and ability to develop by doing rather than by formal study alone.

4) Persons who desire to explore certain skills in attempting to select a vocation.

5) Persons who are handicapped and desire physical and vocational rehabilitation.

Oklahoma State Tech maintains an Advisory Committee which is composed of leaders from various fields of industry. The purpose of this committee is to evaluate the training programs, approve the courses of study, and make recommendations for improvement in job standards for each specific course of study. The courses at Oklahoma State Tech are formally approved by the Board of Regents for Oklahoma State University and the Agricultural and Mechanical Colleges, the Oklahoma State Regents for Higher Education, and the Oklahoma State Accrediting Agency.

The courses of study at Oklahoma State Tech are approved by the Veterans Administration for all of their rehabilitation and education programs which are under their jurisdiction, Public Laws Nos. 634 and 88-361 and 894 and 87-815. The Bureau of Indian Affairs has also approved the courses of study at Oklahoma State Tech for their Adult Training Service, Public Law No. 959. The Navajo Tribe has approved the courses of study for their tribal scholarships. The courses of study are also approved by the Oklahoma Rehabilitation Service and by the rehabilitation agencies of many surrounding states. Several programs have also been conducted by Oklahoma State Tech for the Department of Labor under the Manpower Development and Training Act.

Oklahoma State Tech is open to both men and women. In order to be eligible for enrollment, a student must have reached the age of seventeen and one-half years. The minimum

age limit is the only major requirement. For enrollment students do not need to have graduated from high school. If a person has had previous training or experience in his area of occupational training, credit for this may be applied against the time required to complete his training and educational objectives at Oklahoma State Tech.

The school year is divided into three semesters. Each tri-semester has eighty instructional days, including holidays, and extends over a period of sixteen weeks. The school operates on a six hour day, five days a week. Four hours of shop work and two hours of general education subjects are considered an average student enrollment.

The courses offered and their lengths are:

Course	Length in tri-semesters	Course	Length in tri-semesters
Accounting	6	Brakes & Front Ends	3
Appliance Repair	4	Automotive Service Management	6
Auto Body	4		
Paint Specialist	2	Auto Trim	3
Metal Preparation	2	Auto Glass	1
Body Customing	1	Auto Parts	3
		Bakery	4
Auto Body Shop Operation	5	Cake & Pastry Production	1
		Variety Breads & Rolls Production	1
Auto Mechanics	5	Cake Decoration	1
Tune-up Specialist	3		
Automatic Transmissions	3	Bookkeeping	4

Building Construction	6
Clerk Typist	3
Commercial Art & Advertising	6
Culinary Arts	4
Baking	1
Fry Cook	1
Pantry & Salad	1
Dinner Cook	1
Diesel Fuel Injection	3
Diesel Mechanics	6
Drafting	6
Drycleaning	4
Wool Finishing	1
Silk Finishing	1
Drycleaning Procedures	1
Spotting & Wetcleaning	1
Electrical Maintenance	5
Engineering Aide	6
Farm Machinery	6
Furniture Upholstery	4
General Business	6
Industrial Electrical Maintenance	6
Key Punch Machine	1
Machine Composition	3
Motor Repair	4
Plumbing	5
Printing (Letterpress)	6
Floorwork	3
Press Work	4
Printing (Lithography)	5
Refrigeration & Air Conditioning	6
Secretarial	4
Shoe, Boot, and Saddle Repair	5
Shoe Repair	3
Bootmaking	2
Saddlemaking	2
Small Gasoline Engines	3
Stenographic	3
Teletypesetter Perforator	1
Television Electronics	6
Watchmaker & Micro-Instrumentation	6
Watchmaker	4
Micro-Instrumentation	2

To be eligible to graduate from Oklahoma State Tech, a student must complete all units of shop instruction and general education subjects with an overall average rating of 1.5 or better and must be recommended by the appropriate department head.[1] Vocational and technical schools have different ways of certifying the accomplishments of their graduates. The Associate Degree in Engineering, the Associate Degree of Technical Education, the Associate Degree of Practical Arts are some of the awards that are given to graduates of vocational and technical schools. However, the Certificate of Accomplishment is the award that is given to students who graduate from Oklahoma State Tech.

Enrollment fees per tri-semester at Oklahoma State Tech are currently charged on the following basis: 1 to 5 hours per week is $50.00, 6 to 10 clock hours per week is $95.00, 11 to 20 clock hours per week is $120.00, 21 to 30 clock hours per week is $145.00, and 31 to 40 clock hours per week is $170.00. Certain special courses are $25.00 per week. Non-residents are charged a fee of $100.00 per tri-semester in addition to the general fee. No other fee is charged except for the non-resident fee. The general fee covers all instructional costs except tools which must be purchased separately. The general fee includes the cost of all books and supplies, health services, and other

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[1]For a key to the grading system see Appendix C.

miscellaneous services.[2]

The budget for Oklahoma State Tech is determined by the following method. The number of full-time equivalent faculty positions allowed is multiplied by the average full year salary to determine the total amount needed for teaching salaries. Forty per cent of this figure is alloted for other instructional expenses. This total represents the amount allowed for the function of instruction. This becomes the budget base and the following percentages are applied to the budget base for the remaining expenditures: 16 per cent for General Expense; 2 per cent for Extension and Public Service; 5 per cent for Libraries; and 27 per cent for physical plant. After these are computed, they are added to the base budget to get the total budget requirements for the year. From the total budget, the amount which is estimated to be collected from non-state appropriations during the year is subtracted and the balance is the amount that is requested for appropriation by the state legislature.[3]

Educational and General Income of Oklahoma State Tech

The two principal sources of income for Oklahoma State Tech are student fees and state appropriations (Table 6). Together they provided 84.6 per cent, $1,631,693, of its 1965-1966

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[2]Oklahoma State Tech Bulletin, Okmulgee.

[3]Thirteenth Biennial Report of the Oklahoma State Regents for Higher Education (Oklahoma State Regents for Higher Education: Oklahoma City, June 30, 1966).

TABLE 6

TOTAL EDUCATIONAL AND GENERAL INCOME BY SOURCE FOR 19 OKLAHOMA STATE INSTITUTIONS FOR HIGHER EDUCATION FOR THE FISCAL YEAR 1965-1966
(amounts in dollars)

Institution[a]	Total	Student Fees	State Appropriations	Federal Appropriations	Gifts & Grants	Sales & Services of Educ. Dep'ts	Organized Activities	Other Sources
OU	18,016,579	4,309,675	8,545,518	--	3,829,445	2,142	66,533	1,264,263
OSU	13,763,724	3,381,789	8,604,851	229,806	766,412	233,526	325,113	222,224
CSC	3,555,616	913,857	2,477,203	--	110,794	210	12,168	41,390
ECSC	1,677,646	347,015	1,237,231	--	83,665	933	--	8,798
NESC	2,537,571	645,330	1,881,011	--	3,723	537	--	6,969
NWSC	1,258,187	312,939	911,341	--	6,600	831	15,086	11,387
SESC	1,426,468	294,778	1,055,014	--	55,997	3,052	--	17,625
SWSC	2,220,357	621,133	1,538,161	--	43,930	1,917	--	15,214
OCLA	827,280	114,402	642,208	--	32,229	--	35,762	2,586
PAMC	984,055	196,308	683,635	--	25,000	1,898	67,418	9,794
LU	959,976	174,370	724,000	25,534	16,209	258	12,739	6,864
Cameron	963,340	188,520	698,298	--	50,337	--	15,655	10,528
Connors	412,853	41,988	322,332	--	25,622	123	14,809	7,976
Eastern	600,577	100,206	451,173	--	20,141	--	17,285	11,769
Murray	471,843	60,128	366,402	--	18,254	--	23,215	3,843
NEOAMC	855,295	161,584	631,153	--	33,868	916	17,264	10,507
NOC	524,088	81,795	421,411	--	19,634	411	--	836
OMA	511,549	151,467	330,943	--	--	--	--	29,139
OST	1,870,327	672,194	959,499	--	126,194	821	76,406	35,213
All Institutions	53,437,342	12,778,490	32,481,482	255,340	5,268,061	247,572	699,460	1,716,934

Source: Compiled and Computed from Current Operating Income and Expenditures, Oklahoma State Colleges and Universities, Fiscal Year 1965-66, Oklahoma State Regents for Higher Education, Oklahoma City and Oklahoma State University: Financial Report for the Year Ended, June 30, 1966, Stillwater.

[a]For a key to the abbreviations of these institutions see Appendix F.

budget of $1,870,327. Gifts and grants, sales and services of educational departments, organized activities, and other sources (auxiliary enterprise income, student aid income, and contract research and services income) provided the remainder of $238,634. Of the 19 Oklahoma state institutions for higher education considered, Oklahoma State Tech ranked eighth in the amount of state appropriations received and fourth in the amount of funds received via students fees. They fared favorably as to gifts and grants, being third with a total of $126,194. Industry provided the bulk of this. Sales and services of educational departments were a negligible source of funds with only $821.00. Only Oklahoma State University ranked higher in funds received through organized activities (related to educational departments), $325,113 to $76,406, respectively. Other sources (auxiliary enterprise income, student aid income, and contract research and services income) provided $35,213. Even with the upsurge in the federal concern for vocational and technical education, Oklahoma State Tech, so far, has received no federal funds in direct support of its program.

A percentage distribution of total education and general income gives a good picture of the sources of Oklahoma State Tech's income in comparison to the other eighteen institutions (Table 7). Student fees as a per cent of total income were considerably higher at Oklahoma State Tech. At all institutions student fees made up 23.5 per cent of the total

TABLE 7

PERCENTAGE DISTRIBUTION OF TOTAL EDUCATIONAL AND GENERAL INCOME BY SEVEN SOURCES FOR 19 OKLAHOMA STATE INSTITUTIONS FOR HIGHER EDUCATION FOR THE FISCAL YEAR 1965-1966

Institution	Total	Student Fees	State Appropriations	Federal Appropriations	Gifts & Grants	Sales & Services of Educ. Dep'ts	Organized Activities	Other Sources
OU	100.00	23.9	47.4	--	21.2	0.1	0.4	7.0
OSU	100.00	24.6	62.5	1.7	5.6	1.7	2.3	1.6
CSC	100.00	25.7	69.6	--	3.1	0.1	0.3	1.2
ECSC	100.00	20.7	73.7	--	5.0	0.1	--	0.5
NESC	100.00	25.4	74.1	--	0.2	0.1	--	0.2
NWSC	100.00	24.9	72.4	--	0.5	0.1	1.2	0.9
SESC	100.00	20.7	74.0	--	3.9	0.2	--	1.2
SWSC	100.00	27.8	69.1	--	1.8	0.7	--	0.6
OCLA	100.00	13.8	77.7	--	3.9	--	4.3	0.3
PAMC	100.00	19.9	69.5	--	2.5	0.2	6.9	1.0
LU	100.00	18.2	75.4	2.6	1.7	0.1	1.3	0.7
Cameron	100.00	19.6	72.5	--	5.2	--	1.6	1.1
Connors	100.00	10.1	78.1	--	6.2	0.2	3.5	1.9
Eastern	100.00	16.7	75.1	--	3.4	--	2.9	1.9
Murray	100.00	12.7	77.7	--	3.9	--	4.9	0.8
NEOAMC	100.00	18.9	73.8	--	4.0	0.1	2.0	1.2
NOC	100.00	15.6	80.4	--	3.8	0.1	--	0.1
OMA	100.00	29.6	64.7	--	--	--	--	5.7
OST	100.00	35.9	51.3	--	6.8	--	4.1	1.9
All Institutions	100.00	23.5	61.1	0.5	10.0	0.5	1.2	3.2

Source: Compiled from Table 6.

education and general income. At Oklahoma State Tech they were 35.9 per cent. The next highest percentage was 25.7 per cent at Central State College. However, this was over 10 per cent lower than that of Oklahoma State Tech. Noticeably, the student at Oklahoma State Tech is paying a much higher portion of the total costs of his education than his counterparts at all the other 18 Oklahoma state institutions of higher education. Percentage-wise state appropriations provided 51.3 per cent of Oklahoma State Tech's income. The University of Oklahoma was the only other institution which had a smaller percentage of total income, 47.4, from state appropriations. For all nineteen institutions state appropriations accounted for 61.1 per cent of all their funds. Looking at the five other minor sources of income, Oklahoma State Tech received 12.8 per cent of its income here as compared to 15.4 for all other institutions. Oklahoma State Tech could probably be more likened to the two-year colleges than to the four-year colleges or universities. Comparing the two-year colleges with Oklahoma State Tech, there is even more of a noticeable difference in the source of funds on a percentage basis. Student fees at the two-year colleges averaged about half the per cent of Oklahoma State Tech's student fees. To offset this smaller percentage, the state appropriations to the two-year colleges averaged about 20 per cent higher than Oklahoma State Tech's state appropriations.

One of the best methods of comparing educational

income is to use a per unit basis; that is, the various sources of educational and general income are divided by the number of full-time-equivalent students. For regular colleges and universities a full-time-equivalent student is calculated as follows. The total semester credit-hours earned by undergraduate students are divided by the figure "30" and the total semester credit-hours earned by graduate students are divided by the figure "24." The sum of these two calculations then constitutes the full-time-equivalent student enrollment. However, Oklahoma State Tech does not operate on a credit-hour basis and uses instead a clock hour basis. Because of this, it is difficult to make completely accurate comparisons of full-time-equivalent student enrollments between Oklahoma State Tech and all other institutions. Therefore, the total enrollment for the fall semester was used. In looking at the enrollment figures in detail, it was felt that this figure was sufficiently comparable to full-time-equivalent student figures, and that it would be appropriate to use it as a substitute. If any bias does exist in these figures, it is felt that it is downward and that, therefore, any computations made are probably conservative in their implications.

On a per full-time-equivalent student basis, about the same amount was spent on each student at Oklahoma State Tech versus the average amount spent on students in all institutions, $799.00 and $807.00, respectively (Table 8). Oklahoma State Tech students paid about $287.00 in fees which was

TABLE 8

EDUCATIONAL AND GENERAL INCOME PER FULL-TIME-EQUIVALENT STUDENT BY SEVEN SOURCES FOR 19 OKLAHOMA STATE INSTITUTIONS FOR HIGHER EDUCATION FOR THE FISCAL YEAR 1965-1966
(amounts in dollars except for first column)

Institution	No. FTE Students	Total Ed. & General	Student Fees	State Appropriations	Federal Appropriations	Gifts & Grants	Sales & Services of Ed. Dep'ts	Organized Activities	Other Sources
OU	15,353	1,173	280	557	--	249	--	4	82
OSU	15,091	912	224	570	15	51	15	22	15
CSC	6,903	515	132	359	--	16	--	2	6
ECSC	2,821	594	123	439	--	30	--	--	3
NESC	5,099	497	126	369	--	1	--	--	1
NWSC	1,937	649	161	470	--	3	--	8	6
SESC	2,126	670	138	496	--	26	1	--	3
SWSC	3,968	559	156	388	--	11	--	--	4
OCLA	932	887	122	689	--	35	--	38	3
PAMC	1,115	882	176	613	--	22	2	60	9
LU	1.261	761	138	574	20	13	--	10	5
Cameron	1,950	494	97	358	--	26	--	8	5
Connors	497	830	84	649	--	52	--	30	16
Eastern	1,036	579	97	435	--	19	--	17	11
Murray	605	779	99	606	--	30	--	38	6
NEOAMC	1,555	550	104	406	--	22	1	11	7
NOC	915	572	83	461	--	21	--	--	1
OMA	755	677	201	438	--	--	--	--	36
OST	2,341[a]	799	287	410	--	54	--	33	15
All Institutions	66,260	807	189	493	4	80	4	10	20

Source: Compiled and Computed from Current Operating Income and Expenditures, Oklahoma State College and Universities, Fiscal Year 1965-66, Oklahoma State Regents for Higher Education, Oklahoma City, and Oklahoma State University: Financial Report for the Year Ended, June 30, 1966, Stillwater.

[a]FTE student enrollment estimated from fall 1965 actual enrollment.

about $100.00 more than the all institution average of $189.00. Only the University of Oklahoma was in the same range with student fees, $280.00 per full-time-equivalent student. The average state appropriation per full-time-equivalent student was $493.00. Oklahoma State Tech received only $410.00 on this basis. Only four other institutions received less appropriations on a per full-time-equivalent student basis than Oklahoma State Tech. The all institution average for gifts and grants was $80.00. However, this was biased because of the large amount which the University of Oklahoma received, $249.00. Oklahoma State Tech received $54.00 per full-time-equivalent student which was second, and Oklahoma State University received $51.00 per full-time-equivalent student which was third. All the other institutions received considerably less.

From the preceding remarks on the seven sources of income for the Oklahoma state institutions of higher education, it is readily apparent that in comparison to other Oklahoma state institutions, the students of Oklahoma State Tech are paying a greater share of their education. In addition, they are receiving relatively less from state sources. Possibly this could be justified on the grounds that education received at Oklahoma State Tech is primarily for bettering the person economically, whereas, the student in institutions more academically orientated receives an education which is not only for his own economic advancement but that society in general also

receives benefits. However, it could also be argued that vocational and technical education results in a higher level of productivity and this subsequently brings a higher standard of living for all of society.

Educational and General Expenditures of Oklahoma State Tech

The preceding section attempted to determine the amounts of income from the seven major sources and then showed the breakdown on a per full-time-equivalent student basis and on a percentage basis. The purpose of this section is to determine how the income was spent by function. The distribution of total education and general expenditures is divided into eight functions: general administration, general expense, instruction, organized activities, organized research, extension and public services, libraries, and physical plant.

John Dale Russell recommends the following percentage distribution to be used as a guide in determining expenditures to five major categories:

1. General administration and general expense--15 per cent or less.
2. Instruction and organized activities--60 per cent.
3. Extension and research--3 to 4 per cent, depending on institutional purposes.
4. Libraries--5 to 6 per cent.
5. Physical plant operation and maintenance--16 per cent or less.[4]

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[4]John Dale Russell, "Budgetary Analysis," College Self-Study. Edited by Richard G. Axt and Hall T. Sprague

Russell combines general administration and general expense into one category, instruction and organized activities into another, and extension and public services and organized research into another so that with libraries and physical plant operation and maintenance there are five major categories of expenditures. Expenditures by each function are presented on a dollar basis in Table 9.

In most cases, it is considered desirable to devote as much of the institutional budget as possible to instruction and as little as possible to general administration, general expense, and physical plant operation and maintenance. Of course, there is a limit to this rule beyond which a decrease in the essential services would be dangerous. It should also be emphasized that an increased amount of funds spent on the function of instruction does not necessarily result in a better program.

On a percentage basis, Oklahoma State Tech spent out of its total budget 6.3 per cent and 5.7 per cent on general administration and general expense respectively (Table 10). For the general administration category, this was somewhat above the average for all institutions of 5.1 per cent, but Oklahoma State Tech's expenditures were lower for general expense than the average which was 6.8 per cent. However, in comparison to the two-year colleges, both of these percentages are lower. Combining these two expenditures to

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(Boulder, Colo.: Western Interstate Commission for Higher Education, 1959), p. 106.

TABLE 9

EXPENDITURES FOR 19 OKLAHOMA STATE INSTITUTIONS FOR HIGHER EDUCATION BY EIGHT EDUCATIONAL AND GENERAL FUNCTIONS FOR THE FISCAL YEAR 1965-1966
(amounts in dollars)

Institution	Total	General Ad.	General Expense	Instruction	Organized Activities	Organized Research	Extension & Public Services	Libraries	Physical Plant
OU	17,539,568	676,430	1,096,377	9,123,748	550,714	930,722	2,785,376	760,260	1,615,938
OSU	13,318,080	692,420	783,769	7,748,739	323,112	839,917	769,149	636,682	1,524,288
CSC	3,273,557	125,710	317,627	2,165,867	38,390	5,386	55,695	184,463	380 416
ECSC	1,602,170	88,292	123,251	944,493	--	12,166	29,626	71,914	332,425
NESC	2,403,046	152,160	218,771	1,435,733	--	16,627	25,205	144,551	409,996
NWSC	1,113,971	62,259	120,234	642,778	24,036	--	48,146	34,109	182,407
SESC	1,371,160	83,477	94,793	922,333	--	--	813	65,001	204,740
SWSC	1,882,668	81,369	142,327	1,238,458	18,050	--	68,743	98,174	234,545
OCLA	851,758	69,006	79,530	470,593	62,135	--	--	42,105	128 386
PAMC	965,598	68,545	44,208	502,152	166,858	4,132	6,540	41,049	132,111
LU	916,700	77,077	84,902	487,945	31,596	5,979	6,262	38,867	184,069
Cameron	895,274	53,802	67,403	491,779	28,759	6,048	3,024	49,200	195,257
Connors	407,239	41,735	25,393	219,803	29,063	--	4,869	17,208	69,161
Eastern	579,572	50,242	28,334	351,774	35,469	--	--	19,094	94,657
Murray	488,995	46,004	26,575	283,481	49,556	--	--	26,698	56,679
NOEAMC	849,110	63,624	37,145	558,542	37,921	--	--	35,874	116,003
NOC	500,468	37,471	21,619	338,414	--	200	687	17,662	84,412
OMA	526,225	38,834	59,293	341,825	--	5,179	5,140	20,788	55,164
OST	1,778,739	111,963	102,175	1,209,455	55,331	--	15,524	14,889	269,399
All Institutions	51 263,907	2,620,431	3,473,734	29,477,920	1,450,995	1,826,359	3,824,804	2,319,598	6,269,959

Source: Compiled and Computed From Current Operating Income and Expenditures, Oklahoma State Colleges and Universities, Fiscal Year 1965-66, Oklahoma State Regents for Higher Education, Oklahoma City and Oklahoma State University: Financial Report for the year ended, June 30, 1966, Stillwater.

[a]For a key to the abbreviations of these institutions see Appendix F.

TABLE 10

PERCENTAGE DISTRIBUTION OF TOTAL EDUCATIONAL AND GENERAL EXPENDITURES BY EIGHT FUNCTIONS FOR 19 OKLAHOMA STATE INSTITUTIONS FOR HIGHER EDUCATION FOR THE FISCAL YEAR 1965-66

Institution	Total	General Ad.	General Expense	Instruction	Organized Activities	Organized Research	Extension & Public Services	Libraries	Physical Plant
OU	100.00	3.9	6.3	52.0	3.1	5.3	15.9	4.3	9.2
OSU	100.00	5.2	5.9	58.2	2.4	6.3	5.8	4.8	11.4
CSC	100.00	3.8	9.7	66.2	1.2	.2	1.7	5.6	11.6
ECSC	100.00	5.5	7.7	59.0	-	.8	1.8	4.5	20.7
NESC	100.00	6.3	9.1	59.8	-	.7	1.0	6.0	17.1
NWSC	100.00	5.6	10.8	57.7	2.1	-	4.3	3.1	16.4
SESC	100.00	6.1	6.9	67.3	-	-	.1	4.7	14.9
SWSC	100.00	4.3	7.5	65.8	1.0	-	3.6	5.3	12.5
OCLA	100.00	8.1	9.3	55.2	7.3	-	-	5.0	15.1
PAMC	100.00	7.1	4.6	52.0	17.3	.4	.7	4.2	13.7
LU	100.00	8.4	9.3	53.2	3.5	.7	.7	4.2	20.0
Cameron	100.00	6.0	7.5	54.9	3.2	.7	.4	5.5	21.8
Connors	100.00	10.3	6.2	54.0	7.1	-	1.2	4.2	17.0
Eastern	100.00	8.7	4.9	60.7	6.1	-	-	3.3	16.3
Murray	100.00	9.4	5.4	58.0	10.1	-	-	5.5	11.6
NEOAMC	100.00	7.5	4.4	65.8	4.5	-	-	4.2	13.6
NOC	100.00	7.5	4.3	67.6	-	.1	.1	3.5	16.9
OMA	100.00	7.4	11.2	65.0	-	1.0	.9	4.0	10.5
OST	100.00	6.3	5.7	68.0	3.1	-	.9	.8	15.2
All Institutions	100.00	5.1	6.8	57.1	2.8	3.7	7.7	4.7	12.1

Source: Computed from Table 9.

get Russell's similar category of general administration and general expense, we find that Oklahoma State Tech's expenditures here, 12.0 per cent, is lower and within the guidelines he has set up. For instructional purposes, Oklahoma State Tech spent 68.0 per cent. This was the highest percentage of all schools for this category and was about 10 per cent above the overall average. Organized activities were 3.1 per cent at Oklahoma State Tech. This per cent was higher than the average of 2.8 per cent. Putting both instruction and organized activities together as Russell does, Oklahoma State Tech spent 71.1 per cent on this combined category. This is considerably higher than the minimum recommendation of 60 per cent and higher than the overall average for Oklahoma institutions of 59.9 per cent.

Oklahoma State Tech did not spend any funds on organized research and spent only 0.9 per cent for extension and public services. For this combined grouping Russell recommends 3 to 4 per cent depending on the purposes of the institution. However, the purpose of Oklahoma State Tech is somewhat different than that of other institutions. It is not expected that this institution devote large sums to organized research and public and extension services.

Libraries at Oklahoma State Tech accounted for only 0.8 per cent of the total budget. The Oklahoma average was 4.7 per cent. Russell suggests from 5 to 6 per cent. Again, this is an item which because of the nature of Oklahoma State

Tech's program does not require as much expenditure. Academically orientated institutions require much more for library funds to purchase learned journals, articles, and books. Oklahoma State Tech is not an academically orientated institution and, therefore, would normally expend less for this category. Physical plant operation and maintenance required 15.2 per cent of Oklahoma State Tech's overall budget. The Oklahoma average was 12.1 per cent. However, Oklahoma State Tech's percentage here is still under Russell's recommendation of 16 per cent or less. It is not surprising though that Oklahoma State Tech's requirements for physical plant operation and maintenance is this high since the facilities were not built originally for education purposes, but rather for hospital and rehabilitation purposes. Oklahoma State Tech's facilities are those of the old Glennan General Army Hospital. Some new buildings have been erected, but because of the nature of the older facilities, higher than normal physical operating and maintenance expenditures can be expected.

Because Oklahoma State Tech does not spend a large amount on organized research, public and extension services, and libraries, these funds can be used for instructional purposes. And because of the nature and purpose of this type of institution, closer and more instructor contact and supervision is required. This, therefore, increases instructional and organized activity costs.

On a per full-time-equivalent student basis, Oklahoma

State Tech spent $759.00 on total educational and general expenses. This was less than the all institution average of $774.00 (Table 11). However, this all-institution average is weighted upward because of the higher expenditures by the University of Oklahoma and Oklahoma State University. In general, per FTE student total expenditures were considerably greater for Oklahoma State Tech than they were for the two-year and four-year schools.

Oklahoma State Tech spent more on general administration per full-time-equivalent student than the all-institution average, but about the same as the two-year colleges. General expenses were lower, $43.00, than the average $53.00. But they were generally higher than the two-year colleges. For instructional purposes, only the University of Oklahoma spent more per full-time-equivalent student than Oklahoma State Tech, $594.00 and $516.00, respectively. The average for all institutions was $442.00, with the two-year colleges generally spending less than this amount. Twenty-three dollars was spent by Oklahoma State on organized activities with the average being $22.00. No funds were spent by Oklahoma State Tech for organized research. For extension and public services and libraries, considerably less was spent at Oklahoma State Tech per full-time-equivalent student than the average, $13.00 and $96.00, respectively. The amount for physical plant operation and maintenance was higher at Oklahoma State Tech per full-time-equivalent student, $115.00 versus the all-institution average of $94.00.

TABLE 11

EXPENDITURES PER FULL-TIME-EQUIVALENT STUDENT FOR 19 OKLAHOMA STATE INSTITUTIONS BY EIGHT EDUCATIONAL AND GENERAL FUNCTIONS FOR THE FISCAL YEAR 1965-66
(amounts in dollars except for first column)

Institution	No. FTE Students	Total Ed. & General	General Ad.	General Expense	Instruction	Organized Activities	Organized Research	Exten. & Pub. Serv.	Libraries	Physical Plant
OU	15,353	1,142	44	71	594	35	60	181	50	105
OSU	15,091	882	45	51	513	21	55	51	42	101
CSC	6,903	474	18	46	313	5	1	8	27	55
ECSC	2,821	567	31	43	334	-	4	10	25	118
NESC	5,099	471	29	42	281	-	3	5	28	80
NWSC	1,937	575	32	62	331	12	-	25	17	94
SESC	2,126	644	39	44	433	-	-	-	30	96
SWSC	3,968	474	20	35	312	4	-	17	25	59
OCLA	932	913	74	85	504	66	-	-	45	137
PAMC	1,115	866	61	39	450	149	4	6	36	118
LU	1,261	726	61	67	386	25	5	5	31	145
Cameron	1,950	459	27	34	252	14	3	2	25	100
Connors	497	819	83	51	442	58	-	10	34	139
Eastern	1,036	559	48	27	339	34	-	-	18	91
Murray	605	808	76	43	468	81	-	-	44	94
NEOAMC	1,555	546	40	23	359	24	-	-	23	75
NOC	915	546	40	23	369	-	-	1	19	92
OMA	755	696	51	78	452	-	7	7	28	73
OST	2,341[a]	759	47	43	516	23	-	7	6	115
All institutions	66,260	774	39	53	442	22	29	60	36	94

Source: Compiled and Computed from Current Operating Income and Expenditures, Oklahoma State Colleges and Universities, Fiscal Year 1965-66, Oklahoma State Regents for Higher Education, Oklahoma City, and Oklahoma State University: Financial Report for the year ended, June 30, 1966, Stillwater.

[a]FTE student enrollment estimated from Fall 1965 actual enrollment.

From the foregoing examination of Oklahoma State Tech's expenditures, it can be said that it operated well in terms of the recommendations suggested by Russell and also subscribed to by the State Regents for Higher Education. In fact expenditures were about what would be expected for an institution of this nature and purpose. No year to year comparisons have been made, but a cursory examination showed that the percentage distribution was of somewhat the same nature with annual increases in absolute dollar amounts in the categories. The imbalances which exist as to Oklahoma State expenditures are justifiable on the grounds that the nature of the educational program is different. More instructional time is required than with academically orientated subjects. Also less funds are required for research and libraries with vocational and technical schools.

Student Enrollment at Oklahoma State Tech

One of the most striking differences between the vocational and technical schools and the institutions more academically orientated is the ratio of men to women. At Oklahoma State Tech, men account for about 92.1 per cent of the students, and at the Oklahoma City Technical Institute, they account for 97.9 per cent of the student enrollment (Table 12). The average for all state institutions was 63.2 per cent men and 36.8 per cent women (Table 13). Only the School of Veterinary Medicine and Oklahoma Military Academy were in the same range as Oklahoma State Tech and the Oklahoma City Technical

TABLE 12

STUDENT ENROLLMENT AT OKLAHOMA STATE TECH FROM FALL 1964 TO SUMMER 1966

Tri-semester	Men Number	Men Per Cent	Women Number	Women Per Cent	Total
1964--Fall	1,799	93.8	118	6.2	1,917
1965--Spring	1,747	94.7	98	5.3	1,845
1965--Summer	1,002	91.6	92	8.4	1,094
1965--Fall	2,183	93.2	158	6.8	2,341
1966--Spring	1,971	93.9	127	6.1	2,098
1966--Summer	1,080	92.6	86	7.4	1,166
Total or average	9,782	93.5	679	6.5	10,461

Source: Compiled and computed from Report on Enrollments in Oklahoma Colleges, Fall, 1964; Spring, 1965; Summer, 1965; Fall, 1965; Spring, 1966; and Summer, 1966, Oklahoma State Regents for Higher Education, Oklahoma City.

Institute. Since Oklahoma Military Academy is a military school, a high percentage of men is expected and veterinary medicine is a profession where it is more likely to find men.

Figures from the tri-semesters under consideration in this study also bear out the same general proportion of men to women as stated previously. The average for all tri-semesters in question was 6.5 per cent females and 93.5 per cent males. In looking at the various programs of training offered at Oklahoma State Tech, it is readily explainable why such a high proportion of males exists at this school. The majority of the courses are oriented predominantly to males, and in the courses where one is likely to find both men or

TABLE 13

ENROLLMENT BY SEX IN THE OKLAHOMA STATE SYSTEM OF HIGHER EDUCATION FOR FALL SEMESTER 1966

Institution	Male		Female		Total
	Number	Per Cent	Number	Per Cent	
OU					
Main Campus	10,016	64.7	5,457	35.3	15,473
Sch. of Med.	530	84.2	99	15.8	629
Sch. of Nurs.	2	2.4	81	97.6	83
OSU					
Main Campus	10,205	67.6	5,622	32.4	15,827
Sch. of Vet. Med.	171	93.4	12	6.6	183
CSC	5,025	59.9	3,359	40.1	8,384
ECSC	1,541	53.1	1,359	46.9	2,900
NESC	2,861	56.3	2,219	43.7	5,080
NWSC	1,208	53.7	960	46.3	2,168
SESC	1,216	55.5	985	44.5	2,201
SWSC	2,573	61.5	1,607	38.5	4,180
OCLA	253	25.1	754	74.6	1,007
PAMC	771	66.0	396	44.0	1,167
LU	591	46.2	688	53.8	1,279
Cameron	1,672	68.8	758	21.2	2,430
Connors	361	65.8	187	34.2	548
Eastern	759	68.0	357	32.0	1,116
Murray	527	70.1	224	29.9	751
NEOAMC	1,157	66.1	593	33.9	1,750
NOC	630	62.6	375	37.4	1,005
OST	2,233	92.1	189	7.9	2,422
Oklahoma City Tech. Instit.	634	97.9	13	2.1	647
TOTAL	45,640	63.2	26,342	36.8	71,982

Source: Compiled and computed from Enrollments in Oklahoma Higher Education, 1966, Oklahoma State Regents for Higher Education, Oklahoma City.

women, the enrollment of females is low.

Even though much of the increase in manpower requirements in the future will be in those occupations where men are more adapted, it would seem appropriate that more courses than are presently available should be set up for women. There has been a very definite trend for a greater participation of women in the labor force in recent years and undoubtedly this will continue. To better prepare women for their entry into the labor force, more formal training and education of a vocational or technical nature should be made available for them.

Oklahoma State Tech had 87.5 per cent of its students from Oklahoma, 12.1 per cent from out-of-state, and 0.4 per cent from foreign countries (Table 14). These figures are near those of the all-institution averages of 85.5 per cent for Oklahoma students, 12.7 per cent for out-of-state students, and 1.8 per cent for foreign students. The incidence of foreign students at Oklahoma State Tech was smaller than the average, but the average is biased upward because of the high percentage of foreign students at the University of Oklahoma and at Oklahoma State University. Oklahoma State Tech ranked eighth in the number of total students, but ranked fifth in the number of out-of-state students. Only Oklahoma Military Academy and Northeastern Oklahoma A and M College had a lower percentage of Oklahoma-origin students. There are several reasons why Oklahoma State Tech does have as many out-of-state students as it has. Oklahoma State

TABLE 14

GEOGRAPHIC ORIGIN OF STUDENT ENROLLMENT IN THE OKLAHOMA STATE SYSTEM OF HIGHER EDUCATION FOR THE FALL SEMESTER 1966

Institution	Oklahoma Number	Oklahoma Per Cent	Out-of-State Number	Out-of-State Per Cent	Foreign Number	Foreign Per Cent	Total
OU							
Main Campus	10,797	69.8	4,225	27.3	451	2.9	15,473
Sch. of Med.	485	77.1	114	18.1	30	4.8	629
Sch. of Nurs.	77	92.8	6	7.2	--	--	83
OSU							
Main Campus	13,365	84.4	1,971	12.5	491	3.1	15,827
Sch. of Vet. Med.	113	61.7	70	38.3	--	--	183
CSC	8,178	97.5	135	1.6	71	0.9	8,384
ECSC	2,836	97.8	55	1.9	9	0.3	2,900
NESC	4,964	97.7	101	2.0	15	0.3	5,080
NWSC	1,624	74.9	506	23.3	38	1.8	2,168
SESC	2,024	92.0	173	7.9	4	0.1	2,201
SWSC	3,906	93.4	249	6.0	25	0.6	4,180
OCLA	938	93.1	64	6.4	5	0.5	1,007
PAMC	780	66.8	374	32.1	13	1.1	1,167
LU	1,078	84.3	182	14.2	19	1.5	1,279
Cameron	2,365	97.3	59	2.4	6	0.3	2,430
Connors	531	96.9	13	2.4	4	0.7	548
Eastern	1,053	94.3	40	3.6	23	2.1	1,116
Murray	700	93.2	45	6.0	6	0.8	751
NEOAMC	1,508	86.2	201	11.5	41	2.3	1,750
NOC	973	96.8	24	2.4	8	0.8	1,005
OMA	554	73.7	167	22.2	31	4.1	752

TABLE 14--Continued

Institution	Oklahoma Number	Oklahoma Per Cent	Out-of-State Number	Out-of-State Per Cent	Foreign Number	Foreign Per Cent	Total
OST	2,120	87.5	294	12.1	8	0.4	2,422
Okla. City Tech. Inst.	553	85.5	84	13.0	10	1.5	647
TOTAL	61,522	85.5	9,152	12.7	308	1.8	71,982

Source: Compiled and computed from Enrollments in Oklahoma Higher Education, 1966, Oklahoma State Regents for Higher Education, Oklahoma City.

Tech's programs are approved by several agencies such as the Bureau of Indian Affairs and the Veterans Administration. They are also approved by the Navajo tribe for their tribal scholarships. Other state vocational rehabilitation agencies send their clients to Oklahoma State Tech because of the rehabilitation program which exists there.

Data on the distribution by Oklahoma counties of: 1) the enrollment at Oklahoma State Tech for two years; 2) the enrollment in the Oklahoma state system of higher education for two years; 3) 1966 Oklahoma high school graduates; and 4) the Oklahoma population estimates as of July 1966 are included in Table 15. The table shows the absolute numbers from each county and also the individual percentages of the total for each county. The purpose of this table is to show the geographic distribution of the various categories. Figures from 1966 are used in the following detailed examination.

The total per cent of each category was computed for all counties which were within or touched upon a radius of fifty miles of the city of Okmulgee (Figure 1). Fifty-five per cent of Oklahoma State Tech's students came from this geographic area. Thirty-four per cent of Oklahoma's population and 35 per cent of Oklahoma's 1966 high school graduates were in this area. However, only 28 per cent of the students in the Oklahoma state system of higher education came from this area. This indicates that there is a difference of 27 per cent between Oklahoma State Tech's enrollment and the

TABLE 15

ENROLLMENTS IN THE OKLAHOMA STATE SYSTEM OF HIGHER EDUCATION AND OKLAHOMA STATE TECH. OKLAHOMA HIGH SCHOOL GRADUATES, AND POPULATION OF OKLAHOMA BY COUNTY

County	Oklahoma State Tech				Oklahoma State System				Oklahoma H. S. Graduates 1966		Oklahoma Population July, 1966	
	Fall 1965		Fall 1966		Fall 1965		Fall 1966					
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Adair	20	0.99	19	0.90	300	0.50	283	0.46	217	0.63	13.900	0.56
Alfalfa	11	0.54	11	0.52	359	0.60	358	0.58	122	0.35	8.500	0.34
Atoka	4	0.20	5	0.24	168	0.28	199	0.32	168	0.49	11.000	0.44
Beaver	16	0.79	16	0.75	269	0.45	253	0.41	126	0.37	6.900	0.28
Beckham	6	0.30	6	0.28	386	0.65	397	0.65	244	0.71	17.200	0.69
Blaine	16	0.79	10	0.47	394	0.66	414	0.67	205	0.59	12.500	0.50
Bryan	9	0.45	14	0.66	802	1.34	851	1.38	399	1.15	25.900	1.05
Caddo	25	1.24	35	1.65	719	1.20	769	1.25	466	1.29	30.600	1.24
Canadian	14	0.69	14	0.66	529	0.89	585	0.95	345	1.00	31.100	1.26
Carter	26	1.29	20	0.94	891	1.49	966	1.57	603	1.74	38.400	1.55
Cherokee	23	1.14	16	0.75	848	1.42	887	1.44	222	0.64	19.800	0.80
Choctaw	14	0.69	11	0.52	263	0.44	257	0.42	206	0.66	16.200	0.65
Cimmarron	5	0.25	3	0.14	136	0.23	130	0.21	68	0.20	4.300	0.17
Cleveland	16	0.79	21	0.99	2.279	3.82	2.399	3.90	831	2.40	70.900	2.86
Coal	8	0.40	6	0.28	119	0.20	126	0.21	102	0.29	5.900	0.24
Commanche	29	1.43	28	1.32	2.605	4.37	2.880	4.68	999	2.89	103.000	4.16
Cotton	7	0.37	8	0.32	233	0.39	223	0.36	119	0.34	7.200	0.29
Craig	18	0.89	14	0.66	327	0.55	310	0.50	199	0.58	16.700	0.67
Creek	50	2.47	55	2.59	678	1.14	688	1.12	634	1.83	43.800	1.77
Custer	12	0.59	11	0.52	1.126	1.89	1.120	1.82	287	0.83	22.800	0.92
Delaware	14	0.69	6	0.28	235	0.39	246	0.40	242	0.70	14.700	0.59
Dewey	12	0.59	14	0.66	236	0.40	241	0.39	123	0.36	6.100	0.25
Ellis	6	0.30	7	0.33	194	0.33	203	0.33	94	0.27	5.200	0.21
Garfield	41	2.03	42	1.98	909	1.52	1.011	1.65	723	2.09	56.300	2.27
Garvin	28	1.38	35	1.74	815	1.37	828	1.35	460	1.33	30.000	1.21
Grady	19	0.94	19	0.90	813	1.36	803	1.31	399	1.15	30.100	1.25
Grant	10	0.50	10	0.47	307	0.51	307	0.50	138	0.40	7.600	0.31
Greer	5	0.25	6	0.28	202	0.34	203	0.33	130	0.38	9.100	0.37

TABLE 15--Continued

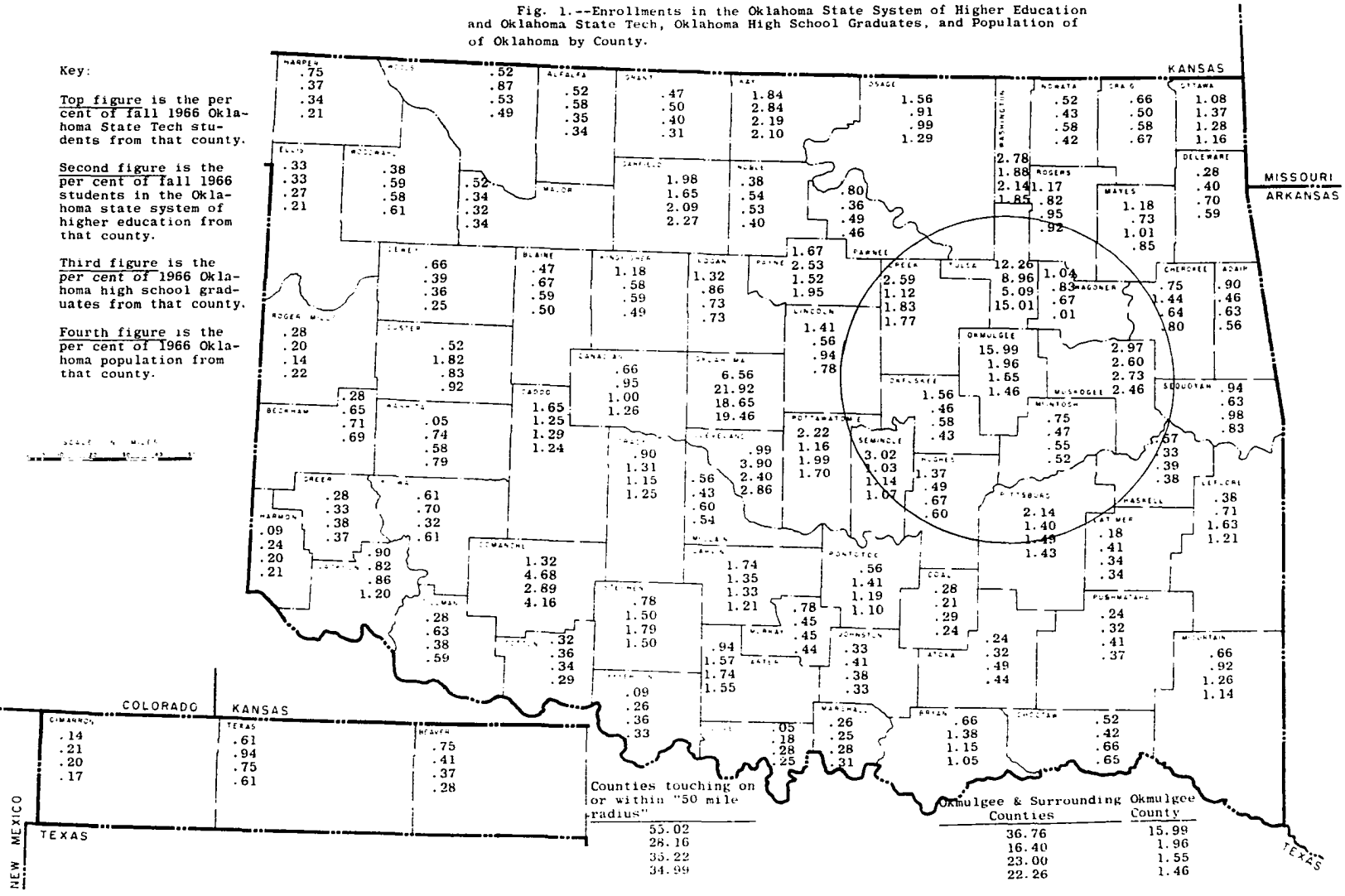
County	Oklahoma State Tech Fall 1965 Number	Per Cent	Oklahoma State Tech Fall 1966 Number	Per Cent	Oklahoma State System Fall 1965 Number	Per Cent	Oklahoma State System Fall 1966 Number	Per Cent	Oklahoma H. S. Graduates 1966 Number	Per Cent	Oklahoma Population July, 1966 Number	Per Cent
Harmon	1	0.05	2	0.09	143	0.24	148	0.24	70	0.20	5,300	0.21
Harper	11	0.54	16	0.75	190	0.32	228	0.37	118	0.34	5,300	0.21
Haskell	20	0.99	12	0.57	215	0.35	199	0.33	136	0.39	9,500	0.38
Hughes	30	1.48	29	1.37	317	0.53	302	0.49	231	0.67	14,900	0.60
Jackson	17	0.85	19	0.90	479	0.80	502	0.82	299	0.86	29,700	1.20
Jefferson	4	0.20	2	0.09	161	0.27	162	0.26	124	0.36	8,100	0.33
Johnston	6	0.30	7	0.33	240	0.40	254	0.41	133	0.38	8,200	0.33
Kay	59	2.92	39	1.84	1,683	2.82	1,750	2.84	757	2.19	52,100	2.10
Kingfisher	20	0.99	25	1.18	360	0.60	354	0.58	205	0.59	12,200	0.49
Kiowa	12	0.59	13	0.61	419	0.70	431	0.70	109	0.32	15,000	0.61
Latimer	6	0.30	4	0.18	260	0.44	253	0.41	117	0.34	8,500	0.34
LeFlore	14	0.69	8	0.38	484	0.81	438	0.71	559	1.63	30,100	1.21
Lincoln	30	1.48	30	1.41	350	0.59	346	0.56	326	0.94	19,400	0.78
Logan	24	1.19	28	1.32	505	0.85	530	0.86	252	0.73	18,200	0.73
Love	2	0.10	1	0.05	111	0.19	111	0.18	98	0.28	6,300	0.25
McClain	12	0.59	12	0.56	249	0.42	263	0.43	215	0.62	13,300	0.54
McCurtain	24	1.19	14	0.66	560	0.94	565	0.92	435	1.26	28,300	1.14
McIntosh	21	1.04	16	0.75	323	0.54	289	0.47	190	0.55	12,800	0.52
Major	4	0.20	11	0.52	200	0.34	210	0.34	110	0.32	8,400	0.34
Marshall	5	0.25	5	0.26	197	0.33	155	0.25	97	0.28	7,600	0.31
Mayes	28	1.38	25	1.18	478	0.80	452	0.73	349	1.01	21,000	0.85
Murray	12	0.60	15	0.78	242	0.41	274	0.45	157	0.45	10,900	0.44
Muskogee	78	3.81	63	2.97	1,613	2.70	1,600	2.60	945	2.73	61,000	2.46
Noble	12	0.60	8	0.38	309	0.52	333	0.54	182	0.53	10,000	0.40
Nowata	8	0.40	11	0.52	185	0.31	263	0.43	200	0.58	10,400	0.42
Okfuskee	28	1.38	33	1.56	234	0.39	282	0.46	199	0.58	10,700	0.43
Oklahoma	142	7.02	139	6.56	13,207	22.14	13,488	21.92	6,448	18.65	482,000	19.46
Okmulgee	235	11.62	339	15.99	1,079	1.81	1,208	1.96	536	1.55	36,100	1.46
Osage	42	2.08	33	1.56	578	0.97	558	0.91	342	0.99	32,000	1.29
Ottawa	25	1.42	23	1.08	874	0.36	844	1.37	443	1.28	28,700	1.16

TABLE 15--Continued

County	Oklahoma State Tech Fall 1965 Number	Oklahoma State Tech Fall 1965 Per Cent	Oklahoma State Tech Fall 1966 Number	Oklahoma State Tech Fall 1966 Per Cent	Oklahoma State System Fall 1965 Number	Oklahoma State System Fall 1965 Per Cent	Oklahoma State System Fall 1966 Number	Oklahoma State System Fall 1966 Per Cent	Oklahoma H. S. Graduates 1966 Number	Oklahoma H. S. Graduates 1966 Per Cent	Oklahoma Population July, 1966 Number	Oklahoma Population July, 1966 Per Cent
Pawnee	16	0.70	17	0.80	217	0.36	222	0.36	170	0.49	11,300	0.46
Payne	28	1.38	35	1.67	1.221	2.05	1.554	2.53	526	1.52	48,400	1.95
Pittsburg	38	1.88	45	2.14	856	1.43	863	1.40	515	1.49	35.500	1.43
Pontotoc	13	0.64	12	0.56	1.159	1.94	1.175	1.91	412	1.19	27,300	1.10
Pottawatomie	51	2.52	47	2.22	744	1.25	713	1.16	689	1.99	42.000	1.70
Pushmataha	7	0.35	5	0.24	208	0.35	194	0.32	142	0.41	9,200	0.37
Roger Mills	10	0.49	6	0.28	138	0.23	125	0.20	48	0.14	5.500	0.22
Rogers	25	1.24	25	1.17	505	0.85	503	0.82	329	0.95	22.700	0.92
Seminole	44	2.18	64	3.02	591	0.99	634	1.03	394	1.14	26.500	1.07
Sequoyah	21	1.04	20	0.94	340	0.57	386	0.63	340	0.98	20.500	0.83
Stephens	24	1.19	18	0.78	964	1.62	923	1.50	618	1.79	37.100	1.50
Texas	8	0.40	13	0.61	574	0.96	579	0.94	260	0.75	15.000	0.61
Tillman	11	0.54	6	0.28	376	0.63	385	0.63	130	0.38	14.600	0.59
Tulsa	240	11.87	260	12.26	5.424	9.09	5.512	8.96	5.217	15.09	371.700	15.01
Wagoner	20	0.99	22	1.04	435	0.73	509	0.83	231	0.67	15,200	0.61
Washington	41	2.03	59	2.78	1,116	1.87	1.159	1.88	739	2.14	45.800	1.85
Washita	5	0.21	1	0.05	466	0.78	456	0.74	201	0.58	19.600	0.79
Woods	16	0.7[illegible]	11	0.52	587	0.98	535	0.87	184	0.53	12.200	0.49
Woodward	8	0.40	8	0.38	355	0.60	366	0.59	202	0.58	15.000	0.61
Total	2.022	100.00	2.120	100.00	59.663	100.00	61.522	100.00	34.580	100.00	2.477.000	100.00

Source: Compiled and Computed from Thirteenth Biennial Report of the Oklahoma State Regents for Higher Education. June 30. 1966. Oklahoma City: Enrollments in Oklahoma Higher Education. Fall Semester 1966. Oklahoma State Regents for Higher Education. Oklahoma City: Report on Enrollments in Oklahoma Colleges. Fall Semester 1966. Oklahoma State Regents for Higher Education. Oklahoma City: and Oklahoma Population Estimates for the State. Standard Metropolitan Statistical Areas and Counties. July 1. 1966. Preliminary Estimates. Oklahoma Employment Security Commission. Oklahoma City.

Fig. 1.--Enrollments in the Oklahoma State System of Higher Education and Oklahoma State Tech, Oklahoma High School Graduates, and Population of of Oklahoma by County.



enrollment in the Oklahoma state system of higher education. Comparing enrollment at Oklahoma State Tech from this area with population from this area, we find that there is a greater proportionate representation of students at Oklahoma State Tech from this area than population in this area, 55 per cent versus 35 per cent. Comparing enrollment in the Oklahoma state system of higher education from this area with population from this area, we find that there is a smaller proportion of students in the Oklahoma state system of higher education from this area than there is population, 28 per cent and 34 per cent, respectively. From this analysis we can possibly say that Oklahoma State Tech is serving this area in relative terms more than the total Oklahoma state system of higher education is. Possibly some of the students who would not attend academically oriented institutions are attending Oklahoma State Tech.

The same analysis was made for Okmulgee county and those counties directly surrounding it. Thirty-seven per cent of the Oklahoma State Tech's students came from this geographic area. Sixteen per cent of the Students in Oklahoma state educational institutions came from this area. Twenty-three per cent of Oklahoma's 1966 high school graduates came from here, and 22 per cent of Oklahoma's population resided here. There is a difference of 21 per cent between Oklahoma State Tech's proportionate enrollment from this area and the proportionate enrollment in the Oklahoma state system of higher

education from this area. If we compare Oklahoma State Tech's enrollment with the population for this area, 37 per cent and 22 per cent, respectively, we find a favorable representation for Oklahoma State Tech. Contrasting the enrollment in the Oklahoma state system with Oklahoma's population, 16 per cent to 22 per cent, we find a smaller representation of higher education students than population from this area. We can say that Oklahoma State Tech is serving this area more proportionately since there is a difference of about 20 per cent between the enrollment at Oklahoma State Tech and the Oklahoma state system of higher education.

The same procedure was also used for Okmulgee county alone. A total of 15.0 per cent of Oklahoma State Tech's students came from here, but it had only 2.0 per cent of the students of higher education, 1.6 per cent of Oklahoma's 1966 high school graduates, and 1.5 per cent of Oklahoma's 1966 population. Of Oklahoma State Tech total enrollment there was a more than proportionate representation from this county. Two per cent of the students in Oklahoma state institutions of higher education are from this county which is greater than the population percentage. A possible conclusion here is that students who would not normally attend any higher education institution at all are attending Oklahoma State Tech.

Both Tulsa and Oklahoma counties had a lower per cent of students at Oklahoma State Tech than their share of

population. Twelve per cent of Oklahoma State Tech's students and 15 per cent of Oklahoma's population came from Tulsa County. For Oklahoma county the percentages were 6 per cent and 19 per cent, respectively. In examining the Oklahoma State Tech enrollment from Oklahoma with other state educational institutions, it may be said that the representation is as equitable as can be expected and probably more equitable than most of the other Oklahoma institutions.

The purpose of the preceding analysis of the patterns of Oklahoma State Tech's enrollment as compared with other associated factors was to show the extent which it serves as an "area" vocational-technical school. From the observations that have been made, it would have to be concluded that it is not serving to any great extent as such.

The average enrollment increases for all institutions in the Oklahoma state system of higher education from 1961 to 1966 was 51.4 per cent (Table 16). Oklahoma State Tech had a 76.0 per cent increase starting from a base of 1,376 in 1961 and increasing to 2,422 students in 1966. Oklahoma City Technical Institute had a much higher increase with 603.3 per cent. However, it started from a relatively smaller base. The increase at Oklahoma State Tech was 11.7 per cent for 1962, 12.8 per cent for 1963, 10.6 per cent for 1964, 22.1 per cent for 1965, and 3.5 per cent for 1966. Only the last two years were erratic. However, the 1966 percentage increase was about the same as the all-institution increase for that year.

TABLE 16

A COMPARISON OF STUDENT ENROLLMENT INCREASES IN THE OKLAHOMA STATE SYSTEM OF HIGHER EDUCATION FOR THE FALL SEMESTERS 1961-66

	1961	1962		1963		1964		1965		1966		1966
Institution	Enroll.	Enroll.	% of Incr. over 1961	Enroll.	% of Incr. over 1962	Enroll.	% of Incr. over 1963	Enroll.	% of Incr. over 1964	Enroll.	% of Incr. over 1965	% Incr. Over 1961
OU												
Main Camp.	11.244	12.117	7.8	13.064	7.8	14.163	8.4	15.640	10.4	15.473	(1.1)	37.6
Sch. of Med.	469	522	11.3	574	10.0	594	3.5	622	4.7	629	1.1	34.1
Sch. of Nurs.	97	76	(21.6)[a]	68	(10.5)	75	10.3	67	(10.7)	83	23.9	(14.4)
OSU												
Main Camp.	11.146	11.628	4.3	11.790	1.4	13.038	10.6	14.899	14.3	14.827	6.2	42.0
Sch. Vet. Med.	155	167	7.7	171	2.4	176	2.9	180	2.3	183	1.7	18.1
CSC	4.622	5.146	11.3	5.913	14.9	6.966	17.8	8.038	15.4	8.384	4.3	81.4
ECSC	1.904	2.050	7.7	2.038	(1.1)	2.321	13.9	2.736	17.9	2.900	6.0	52.3
NESC	3.114	3.047	(2.2)	3.355	10.1	4.138	23.3	4.840	17.0	5.080	5.0	63.1
NWSC	1.311	1.284	(2.1)	1.229	(4.3)	1.535	24.9	2.040	32.9	2.168	6.3	65.4
SESC	1.864	1.958	5.0	2.315	18.2	2.175	(6.0)	2.238	2.9	2.201	(1.7)	18.1
SWSC	2.144	2.467	15.1	2.588	4.9	3.159	22.1	3.737	18.3	4.180	11.9	95.0
OCLA	667	658	(1.3)	642	(2.4)	651	1.4	885	35.9	1.007	13.8	51.0
PAMC	1.024	837	(18.3)	845	1.0	913	8.0	1.073	17.5	1.167	8.8	14.0
LU	645	699	8.4	672	(3.9)	925	37.6	1.187	28.3	1.279	7.8	98.2
Cameron	1.565	1.458	(6.8)	1.630	11.8	2.027	24.4	2.381	17.5	2.430	2.1	55.3
Connors	472	515	9.1	514	(0.2)	519	1.0	553	6.6	548	(0.9)	16.1
Eastern	884	709	(19.8)	737	3.9	879	19.3	1.102	25.4	1.116	1.3	26.2
Murray	403	344	(14.6)	384	11.6	549	43.0	659	20.0	751	14.0	86.4
NEOAMC	1.267	1.392	9.9	1.462	5.0	1.712	17.1	1.816	6.1	1.750	(3.6)	38.1
NOC	589	626	6.3	700	11.8	801	14.4	978	22.1	1.005	2.8	70.6
OMA	491	556	13.2	656	18.0	657	0.2	717	9.1	752	4.9	53.2
OST	1.376	1.537	11.7	1.733	12.8	1.917	10.6	2.341	22.1	2.422	3.5	76.0
OC Tech. Inst.	92	384	317.4	586	52.6	463	(21.0)	535	15.6	647	20.9	603.3
Total or Aver.	47.545	50.177	5.4	53.666	7.0	60.353	12.5	69.264	14.8	71.982	3.9	51.4

Source: Compiled and Computed from Enrollments in Oklahoma Higher Education, 1966, Oklahoma State Regents for Higher Education, Oklahoma City.

[a]Parentheses indicate a decrease over the previous year.

The Oklahoma Employment Security Commission published the document, Manpower in Oklahoma: A Current Inventory and Future Requirements Study, in December of 1964. It described in extensive detail the character of the current manpower force in Oklahoma and also projected the personal requirements and training needs for selected years from 1963 to 1975. Between October 1965 and October 1975, the percentage increase projected for the technical fields was 21.6 per cent and 14.9 per cent for the skilled occupations. The absolute amounts in October 1965 were 38,382 workers in the technical occupations and 119,491 workers in the skilled occupations. It was projected that by October of 1975, there would be a need of 45,592 technical workers and 135,858 skilled workers.[5] Additional workers will not only be needed to meet expansion needs, but also to replace those workers who are retiring or leaving the work force. It appears that the institutions now operating the various vocational and technical progress will have to be expanded even further to meet these requirements. In fact it now appears likely that some new institutions will have to be created in order to supply the demand for skilled workers, especially if the amount of training and education required for entrance into these fields of work increase between now and 1975 which is thought to be likely to happen.

A very extensive and exhaustive attempt was made to

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[5]Manpower in Oklahoma: A Current Inventory and Future Requirements Study, Oklahoma Employment Security Commission, Oklahoma City, p. 16.

establish some type of drop-out rate for all the courses of instruction offered at Oklahoma State Tech. "Enrollment Reports" from the office of the State Regents for Higher Education were examined. The appropriate tri-semesters were checked for each course of instruction in order to get that group of students who had expected to graduate in the summer of 1966 if they would not have interrupted their studies. Since the courses of instruction differ as to their length, the graduation date was used as the unifying device. However, the author was unable to compute a reliable estimate of the drop-out rate. For example, the total number of students in their last tri-semester at Oklahoma State Tech in each particular course of instruction, and who would have normally expected to graduate, was 124, but 210 students graduated on August 12, 1966. Other similar discrepancies were also found.[6] No doubt the accounting procedures used in computing the enrollment figures for every course of instruction at each level of completion are inconsistent. Action should be taken to rectify these inconsistencies.

From the examination of the records, it is evident that there is a very high drop-out rate. This high drop-out rate could be attributed in part to the fact that students quit school to accept jobs before graduation. The student receives the amount of training he feels is sufficient for

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[6]"Enrollment in Oklahoma Higher Education," 1965 and 1966, Oklahoma State Regents for Higher Education, Oklahoma City.

him and takes a job without fully completing the course.

According to a national survey made by G. Ross Henninger, regarding vocational-technical schools, the per cent of students who completed their program ranged from 5 per cent to 100 per cent for various schools. The median was 50 per cent and the mean was 59 per cent. Twenty-nine schools reported that the number of completions was 5 to 40 per cent, 50 said 50 to 75 per cent, and 12 said 80 to 100 per cent.[7]

The completion ratio for Oklahoma State Tech students is very low. To insure the full development of these workers' skills, effort should be made to enable them to complete their prescribed curriculum. In later chapters, data will be presented that attempt to isolate certain characteristics of the drop-outs from those of the graduates.

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[7]G. Ross Henninger, The Technical Institute in America (New York: McGraw-Hill Book Co., Inc.), p. 58.

CHAPTER VI

SOCIO-ECONOMIC CHARACTERISTICS OF OKLAHOMA STATE TECH SUMMER 1966 GRADUATES AND DROPOUTS

Socio-economic characteristics of Oklahoma State Tech summer 1966 graduates and dropouts are discussed in this chapter. Social or personal factors include sex, race, age, marital status, geographic origin, and rural or urban background. Graduates and dropouts are compared with each other and with certain other base groups. Economic factors include parents' occupation of graduates and dropouts, parents' income of graduates, graduates' occupations before and after training, job prospects of graduates at graduation, job expectations of those graduates who did not have jobs at graduation, employment status of graduates six months after graduation, location of graduates' employment, number of those graduates moving to metropolitan areas who had not lived there before Oklahoma State Tech training, reasons given why graduates would change jobs if they did, job mobility based on rural versus urban background of graduates, methods used by graduates to obtain jobs, future job expectations of graduates, and employment characteristics of graduates. Monthly income of graduates is discussed by sex, race, disabled versus

non-disabled, rural versus urban background, in-state versus out-of-state job location, selected geographic areas, and by area of training. Psychological characteristics of graduates discussed include perceptions of job characteristics before and after graduation and why they trained in their particular fields.

The data on the graduates were taken from the pre-graduation questionnaire given to Oklahoma State Tech summer 1966 graduates immediately before graduation and from the post-graduation follow-up questionnaire which was sent to them six months after graduation and from the Registrar's Office at Oklahoma State Tech. The sole source of data for the dropouts was the Registrar's Office at Oklahoma State Tech.

Graduates and Dropouts by Sex

As discussed in Chapter V (See Tables 12 and 13), a noticeable difference exists at the vocational and technical schools in the ratio of men to women. The fall 1966 enrollment in the state system of higher education was 63.2 per cent men and 36.8 per cent women (Table 17). In 1962 the State Regents for Higher Education conducted the In and Out of College study, a longitudinal study of the 1962 freshman class in Oklahoma colleges. They found that 60.3 per cent of the incoming freshmen were males and 39.7 per cent were females. For freshman dropouts the ratio was 57.3 per cent males to 42.7 per cent females. The total enrollment for the

TABLE 17

FALL 1966 ENROLLMENT IN THE OKLAHOMA STATE SYSTEM OF HIGHER EDUCATION, 1962-63 FIRST-TIME FRESHMEN AND FRESHMAN DROPOUTS IN OKLAHOMA COLLEGES, SUMMER 1966 OKLAHOMA STATE TECH GRADUATES AND DROPOUTS, AND SUMMER 1966 ENROLLMENT AT OKLAHOMA STATE TECH BY SEX

Category	Male Number	Male Per Cent	Female Number	Female Per Cent	Total
State System	45,640	63.2	26,342	36.8	71,982
First-time Freshmen	7,979	60.3	5,249	39.7	13,228
Freshman Dropouts	2,382	57.3	1,774	42.7	4,156
OST Graduates	182	86.7	28	13.3	210
OST Dropouts	199	89.2	24	10.8	223
OST Total Enrollment	1,080	92.6	86	7.4	1,166

Source: Compiled and computed from Enrollments in Oklahoma Higher Education, 1966, Oklahoma State Regents for Higher Education, Oklahoma City; John T. Coffelt and Dan S. Hobbs, In and Out of College (Oklahoma City: Oklahoma State Regents for Higher Education, 1964), pp. 36, 100; and Oklahoma State Tech Registrar's Office.

1966 summer tri-semester at Oklahoma State Tech was 1,080 students. However, 92.6 per cent of them were males and 7.4 per cent of them were females. Two hundred and ten students graduated at the end of the 1966 summer tri-semester. Of the graduates 86.7 per cent were men and 13.3 per cent were women. Two hundred and twenty-three students dropped out of this tri-semester. Of the dropouts, 89.2 per cent were men and 10.8 per cent were women. The per cent of males

of the Oklahoma State Tech graduates was somewhat lower than the per cent of male dropouts. In both the graduate and the dropout groups, the male percentage was lower and the female percentage higher than the Oklahoma State Tech average for the six tri-semesters studied (Table 12).

It is obvious that the productive talents of American women, and more specifically Oklahoma women, are not being fully utilized. No doubt much of the high male to female ratio can be explained by the fact that most of the course offerings at Oklahoma State Tech are oriented towards men. As the percentage of women in the work force continues to increase, higher minimal amounts of education will be needed and more education will have to be specifically provided for this group.

Graduates and Dropouts by Race

Another striking difference between Oklahoma State Tech students and the students in other Oklahoma colleges is the higher per cent of Indians and Negroes enrolled at Oklahoma State Tech.

For the graduates and dropouts of Oklahoma State Tech, the percentage of Indians was 11.0 per cent and 9.4 per cent, respectively (Table 18). It was 1.6 per cent and 2.1 per cent, respectively, for the 1962 incoming freshmen and freshman dropouts at the University of Oklahoma. Indians made up 2.8 per cent of the total population of Oklahoma in 1960.

TABLE 18

OKLAHOMA STATE TECH SUMMER 1966 GRADUATES AND DROPOUTS, 1962-63 FIRST-TIME FRESHMEN AND FRESHMEN DROPOUTS OF OKLAHOMA COLLEGES, and 1960 OKLAHOMA POPULATION BY RACE

	INDIAN		NEGRO		WHITE		OTHER		TOTAL	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Graduates	23	11.0	15	7.1	169	80.5	3	1.4	210	100
Dropouts	21	9.4	22	9.9	179	80.3	1	0.4	223	100
First-Time Freshmen	209	1.6	459	3.5	12,374	94.6	38	0.3	13,080	100
Freshmen Dropouts	96	2.1	179	3.8	4,379	93.8	14	0.3	4,668	100
Oklahoma Population	64,689	2.8	153,084	6.6	2,107,900	90.5	2,611	0.1	2,328,284	100

Source: Data for Graduates from Pre-Graduation Questionnaire. Data for Dropouts from Oklahoma State Tech Registrar's Student files. Data for First-Time Freshmen and Freshmen Dropouts from In and Out of College, Report I: The First Year, John T. Coffelt and Dan S. Hobbs (Oklahoma City: Oklahoma State Regents for Higher Education, 1964), pp. 54, 110, respectively. Data for Oklahoma Population from U.S. Census of Population: 1960, Oklahoma PC(1)-38B, Table 15.

Oklahoma State Tech also has a relatively large number of Negroes in attendance. Of the Oklahoma State Tech graduates 7.1 per cent were Negro and 9.9 per cent of the dropouts were Negro. Negroes accounted for 3.5 per cent of the total incoming freshmen and 3.8 per cent of the freshman dropouts were Negro. The Oklahoma population in 1960 consisted of 6.6 per cent Negroes.

Because of the higher percentages of Negroes and Indians, the per cent of whites is, therefore, considerably lower for Oklahoma State Tech compared with other Oklahoma colleges and the state population. Eighty and one-half per cent of Oklahoma State Tech graduates and 80.3 per cent of its dropouts were white. For first-time freshmen in Oklahoma colleges, the per cent was 94.6 per cent white. Freshman dropouts consisted of 93.8 per cent white. Oklahoma population in 1960 was 90.5 per cent white.

"Other races" amounted to 1.4 per cent and 0.4 per cent, respectively, for Oklahoma State Tech graduates and dropouts. They accounted for 0.3 per cent for both first-time freshmen and freshman dropouts. Only 0.1 per cent of the Oklahoma population in 1960 was made up of races other than Indian, Negro, and white.

Various reasons can be suggested for the disproportionately high amount of Indians and Negroes at Oklahoma State Tech and the smaller share of Indians and Negroes in other Oklahoma colleges. Income and parental education are

generally considered as being the two most important factors. In 1960 the median years of educational attainment by the white adult population was 10.7 years. The median years of educational attainment by the non-white population was only 8.6 years.[1] In addition, the median family income for Oklahoma whites was $4,824 in 1959. The comparable statistic for non-whites was $2,378.[2] Also Oklahoma State Tech is located in an area of heavy Indian and Negro population. There are other factors which are also important in determining patterns of enrollment in institutions of higher education. Some of these factors will be examined in later material.

Graduates and Dropouts by Age

The average entrance age of Oklahoma State Tech summer 1966 graduates was 22.67 years (Table 19). The average for the dropouts of the summer 1966 tri-semester was slightly higher, 23.5 years of age. However, the median for the graduates was 22 years and 21 years for the dropouts, a reverse situation in comparison to the mean. In a national survey of vocational-technical schools by G. Ross Henninger, he found that the average matriculation age of students was

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[1]Bureau of the Census, United States Census of Population: 1960, General and Social Characteristics: Oklahoma, Final Report PC (1)-38C (Washington: U.S. Gov't Printing Office, 1961), Table 47.

[2]Ibid., Table 66.

TABLE 19

ENTRANCE AGE COMPARISON BETWEEN OKLAHOMA STATE TECH SUMMER 1966 GRADUATES AND DROPOUTS

Age Category	Graduates		Dropouts	
	Number	Per Cent	Number	Per Cent
17 years	3	1.4	6	2.7
18 years	12	5.7	22	9.9
19 years	18	8.6	53	23.7
20 to 24 years	134	63.8	68	30.5
25 to 29 years	22	10.5	25	11.2
30 to 39 years	13	6.2	23	10.3
40 to 49 years	5	2.4	18	8.1
50 to 65 years	3	1.4	8	3.6
Total	210	100.0	223	100.0
Mean	22.67		23.15	
Median	22		21	

Source: Oklahoma State Tech Registrar's Office.

20 years with the median being 19 years. This is somewhat lower than the figures from Oklahoma State Tech. The students in this survey ranged from 18 to 27 years of age.[3] The age spread at Oklahoma State Tech was considerably greater, from 17 to 65 years of age.

The greatest concentration of students at Oklahoma State Tech was in the 20 to 24 year range with 63.8 per cent for the graduates and 30.5 per cent for the dropouts. It is

[3] G. Ross Henninger, The Technical Institute in America (New York: McGraw-Hill Book Co., Inc., 1961), p. 58.

interesting to note that only 13.3 per cent of the graduates and 32.3 per cent of the dropouts were in the 18 and 19 year age categories. If a student attended school immediately following his high school graduation, he would normally be expected to be in one of these two age brackets. It is also interesting to note that there is a wide range of ages shown at Oklahoma State Tech. Certainly one reason for this is that there is no requirement for a student to have graduated from high school. This allows many older workers to return to school to be trained or retrained.

Graduates and Dropouts by Marital Status

Considerably more students at Oklahoma State Tech were married than at other institutions of higher education in Oklahoma (Table 20). With the summer 1966 Oklahoma State Tech students, only 51.9 per cent of the graduates and 57.3 per cent of the dropouts were single. No other institution in the state system of higher education had a lower percentage of students who were single. In fact, the next lowest was Cameron with 79.5 per cent of their students being single. The overall average of all schools in the state system of higher education excluding Oklahoma State Tech was 92.4 per cent.

The per cent of married students was, therefore, higher for Oklahoma State Tech graduates and dropouts. Forty-one and nine-tenths per cent of the graduates and 30.5 per cent of the dropouts were married. The institution

TABLE 20

MARITAL STATUS OF FALL 1962 FIRST-TIME FRESHMEN IN THE OKLAHOMA STATE SYSTEM, SUMMER 1966 OKLAHOMA STATE TECH GRADUATES, AND SUMMER 1966 OKLAHOMA STATE TECH DROPOUTS

Institution or Category	Single		Married		Other			No	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Total	Response	Grand Total
OU	2,063	95.2	96	4.4	8	0.4	2,167	52	2,219
OSU	2,338	96.9	67	2.8	8	0.3	2,413	39	2,452
CSC	887	85.9	133	12.9	12	1.2	1,032	20	1,052
ECSC	329	88.0	41	11.0	4	1.0	374	7	381
NESC	618	90.6	53	7.7	11	1.6	682	5	687
NWSC	318	95.8	14	4.2	--	--	332	6	338
SESC	286	94.1	14	4.6	4	1.3	304	7	311
SWSC	553	90.3	52	8.8	5	0.9	590	6	596
OCW	139	91.5	11	7.2	2	1.3	152	1	153
PAMC	195	90.3	20	9.2	1	0.5	216	5	221
LU	192	98.5	3	1.5	-	--	195	6	201
Cameron	443	79.5	102	18.3	12	2.2	557	10	567
Connors	148	91.4	13	8.0	1	0.6	162	4	166
Eastern	295	93.4	20	6.3	1	0.3	316	8	324
Murray	180	92.3	14	7.2	1	0.5	195	-	195
NEOAMC	477	88.3	55	10.2	8	1.5	540	9	549
NOJC	251	95.8	10	3.8	1	0.4	262	3	265
OMA	86	89.6	10	10.4	-	--	96	-	96
State Total	9,778	92.4	728	6.9	79	0.7	10,585	188	10,773
Summer 1966 OST Graduates	109	51.9	88	41.9	13	6.2	210	--	210

TABLE 20--Continued

Institution or Category	Single Number	Single Per Cent	Married Number	Married Per Cent	Other Number	Other Per Cent	Total	No Response	Grand Total
Summer 1966 OST Dropouts	150	57.3	68	30.5	5	2.2	223	--	223

Source: Compiled and computed from John J. Coffelt and Dan S. Hobbs. In and Out of College. (Oklahoma City: Oklahoma State Regents for Higher Education, 1964), p. 58; Pre-graduation questionnaire given to 1966 summer Oklahoma State Tech graduates; and Oklahoma State Tech Registrar's Office.

closest to these figures was Cameron with 18.3 per cent of its students married. The average for all institutions excepting Oklahoma State Tech was 6.9 per cent.

Other (widowed, divorced, or separated) constituted 6.2 per cent and 2.2 per cent of Oklahoma State Tech's graduates and dropouts, respectively. The overall average for "other" institutions except for Oklahoma State Tech was 0.7 per cent. Again, Cameron was the only institution which was near Oklahoma State Tech's percentages.

The higher percentages of students at Oklahoma State Tech who were either married or widowed, divorced, or separated is probably due to a great extent to the older ages of many of the students at Oklahoma State Tech. Most of the students at other institutions probably come directly from high school to colleges. Many Oklahoma State Tech students do not attend school immediately after high school graduation.

It is generally agreed that marital status in some way affects whether or not a student graduates or drops out from school. The married percentage for graduates was 41.9 per cent while it was 30.5 per cent for dropouts.

Graduates and Dropouts by Geographic Origin

The per cent of Oklahoma State Tech Summer 1966 graduates and dropouts from Oklahoma was 87.1 per cent and 85.7 per cent, respectively (Table 21). This was near the state institution average of 85.5 per cent. Oklahoma State

TABLE 21

GEOGRAPHIC ORIGIN OF ENROLLMENTS IN THE OKLAHOMA STATE SYSTEM OF HIGHER EDUCATION, FALL SEMESTER 1966, AS COMPARED WITH SUMMER 1966 GRADUATES AND DROPOUTS OF OKLAHOMA STATE TECH

Institution or Category	Oklahoma		Out-of-State		Foreign		Total
	Number	Per Cent	Number	Per Cent	Number	Per Cent	
OU							
Main Campus	10,797	69.8	4,225	27.3	451	2.9	15,473
School of Med.	485	77.1	114	18.1	30	4.8	629
School of Nurs.	77	92.8	6	7.2	--	--	83
OSU							
Main Campus	13,365	84.4	1,971	12.5	491	3.1	15,827
School of Vet. Med.	113	61.7	70	38.3	--	--	183
CSC	8,178	97.5	135	1.6	71	0.9	8,384
ECSC	2,836	97.8	55	1.9	9	0.3	2,900
NESC	4,964	97.7	101	2.0	15	0.3	5,080
NWSC	1,624	74.9	506	23.3	38	1.8	2,168
SESC	2,024	92.0	173	7.9	4	0.1	2,201
SWSC	3,906	93.4	249	6.0	25	0.6	4,180
OCLA	938	98.1	64	6.4	5	0.5	1,007
PAMC	780	66.8	374	32.1	13	1.1	1,167
LU	1,078	84.3	182	14.2	19	1.5	1,279
Cameron	2,365	97.3	59	2.4	6	0.3	2,430
Connors	531	96.9	13	2.4	4	0.7	548
Eastern	1,053	94.3	40	3.6	23	2.1	1,116
Murray	700	93.2	45	6.0	6	0.8	751

TABLE 21--Continued

Institution or Category	Oklahoma Number	Oklahoma Per Cent	Out-of-State Number	Out-of-State Per Cent	Foreign Number	Foreign Per Cent	Total
NEOAMC	1,508	86.2	201	11.5	41	2.3	1,750
NOC	973	96.8	24	2.4	8	0.8	1,005
OMA	554	73.7	167	22.2	31	4.1	752
Total or Average	61,522	85.5	9,152	12.7	1,308	1.8	71,982
OST Graduates, Summer 1966	183	87.1	25	12.0	2	0.9	210
OST Dropouts, Summer, 1966	199	85.7	24	14.3	--	--	223

Source: For Oklahoma State System from Enrollments in Oklahoma Higher Education, 1966, Oklahoma State Regents for Higher Education, Oklahoma City, and for graduates and dropouts, Oklahoma State Tech Registrar's Office.

Tech is drawing about the same amount of students from out-of-state as the state system of higher education in general, 12.0 per cent for graduates and 14.3 per cent for dropouts as compared to the state institution average of 12.7 per cent.

Foreign students comprised 0.9 per cent of the graduates, and there were no foreign students in the dropouts. The lack of any foreign students in the dropout category, possibly, indicates that considerable screening has been done both by the school and by the student or government to insure that foreign students who are sent will be capable of completing their program of training.

One reason that the out-of-state percentage for Oklahoma State Tech is near the all-institution average could be that many out-of-state students come to Oklahoma State Tech because they cannot receive similar training in their own states. However, with the great surge in the interest of vocational-technical education in surrounding states, it is possible that this percentage might decrease in future years. One of the reasons why out-of-state students are encouraged to attend Oklahoma institutions is that they might decide to stay in Oklahoma for employment after graduation. This factor will be examined later.

Graduates and Dropouts by Rural Versus Urban Background

Of the summer 1966 Oklahoma State Tech graduates, 37.6 per cent were from rural areas, and 62.4 were from urban

areas. For the dropouts, 38.1 per cent were from a rural background and 61.9 per cent were from an urban background (Table 22). These percentages compare favorably with each other and there does not seem to be any significant difference between them to indicate that people from one type of background are any more likely to graduate or drop out from school than people from another type of background.

In 1960, the population of Oklahoma was 37.1 per cent rural and 62.9 per cent urban.[4] The rural versus urban background of Oklahoma State Tech graduates and dropouts are comparable to these figures. Also, the male-female ratio indicates that there is not a disproportionate representation of one sex from either rural or urban areas. Other facets of the rural versus urban background will be pursued later.

Graduates' and Dropouts' Parents by Occupational Status

Occupational status, income, and education are all interrelated. Such factors in turn effect the social and cultural values placed on the need and importance of education.

Professional, technical, and kindred workers accounted for 9.7 per cent of the parents' occupations of graduates and 9.1 per cent for the dropouts (Table 23). In Oklahoma this

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[4]U. S. Bureau of Census, U. S. Census of the Population, Characteristics of the Population, 1960, Vol. I, Pt. 38, 1, Oklahoma (Washington: Gov't Printing Office).

TABLE 22

RURAL VERSUS URBAN BACKGROUND OF OKLAHOMA STATE TECH SUMMER 1966 GRADUATES AND DROPOUTS

Category	Rural				Urban				Total	
	Male		Female		Male		Female			
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Graduates	68	32.4	11	5.2	114	54.3	17	8.1	210	100.0
Dropouts	78	35.0	7	3.1	121	54.3	17	7.6	223	100.0

Source: Oklahoma State Tech Registrar's Office.

TABLE 23

EMPLOYMENT BY MAJOR OCCUPATIONAL CATEGORIES FOR SUMMER 1966 OKLAHOMA STATE TECH GRADUATES' AND DROPOUTS' PARENTS, FOR 1960 OKLAHOMA POPULATION, AND FOR 1965 UNITED STATES POPULATION

Major Occupational Category	Graduates		Dropouts		Oklahoma		United States	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Professional, technical, and kindred workers	17	9.7	15	9.1	90,745	11.7	8,883,000	11.2
Managers, officials, and proprietors, except farm	24	13.7	14	8.5	76,874	9.9	7,340,000	10.6
Clerical and kindred workers	2	1.1	4	2.4	111,218	14.3	11,166,000	14.7
Sales workers	8	4.6	1	0.6	61,344	7.9	4,715,000	6.6
Craftsmen, foremen, and kindred workers	34	19.4	41	24.9	113,667	14.6	9,221,000	12.8
Operatives and kindred workers	9	5.1	17	10.3	117,800	15.1	13,390,000	18.0
Service workers, including private household	4	2.3	7	4.2	94,479	12.1	9,342,000	12.5
Laborers, except farm and mine	36	20.6	31	18.8	39,429	5.1	3,855,000	5.5
Farmers and farm managers, laborers, and foremen	41	23.5	35	21.2	72,148	9.3	4,265,000	8.1
Total reported employment	175	100.0	165	100.0	777,704	100.0	72,179,000	100.0
Disabled or retired	25		48					
No response	10		10		42,670			
Totals	210		223		820,374			

Source: For graduates from the pre-graduation questionnaire: for the dropouts from Oklahoma State Tech Registrar's Office; for Oklahoma from U. S. Bureau of Census, United States Census of Population, 1960; Detailed Characteristics, Oklahoma, Final Report (1)-38D, Table 120; for United States, Manpower Report of the President and A Report on Manpower Requirements, Resources, Utilization, and Training, U.S. Dep't of Labor, April, 1967 (Washington: Gov't Printing Office), p. 274, Table E-8.

class made up 11.7 per cent of the work force, and for the nation it was 11.2 per cent. For both the graduates and the dropouts, the percentage of parents in this category was less than both the state and the nation. No doubt many of the parents in this class are encouraging their children to go to an academically orientated school.

For managers, officials, and proprietors, except farm, the per cent for the graduates' parents was 13.7 per cent and 8.5 per cent for the dropouts. It was 9.9 per cent and 10.6 per cent for the Oklahoma and the United States labor forces, respectively. The graduate percentage was somewhat higher than the two base figures, Oklahoma and the nation, and the dropout figure was slightly lower than the base figures. The high percentage for the graduates is noticeable since as with the previous occupational category discussed, one would expect those parents to encourage their children to attend more academically orientated institutions in order for them to maintain the same occupational and social class.

Only 1.1 per cent of the parents' occupations of the graduates and 2.4 per cent of the dropouts were in the clerical and kindred worker class. The per cent for Oklahoma was 14.3 per cent and 14.7 per cent for the nation. There is a very large discrepancy for both the graduates and the dropouts between the two base percentages.

The same general situation exists as regards to sales

workers. Four and six-tenths per cent of the graduates' parents were in this category and 0.6 per cent of the dropouts' parents. The state had 7.9 per cent of its labor force in this category and the nation had 6.6 per cent here. Both the graduates, in particular, and the dropouts were considerably below the state and national percentages.

Craftsmen, foremen, and kindred workers' occupations of the parents made up 19.4 per cent for the graduates and 24.9 per cent for the dropouts. Fourteen and six-tenths per cent of the Oklahoma labor force and 12.8 per cent of the national labor force were in this category. With both the graduates' and the dropouts' parents, their percentage was greater than the Oklahoma and national percentages. This would be normally expected since these parents would probably encourage their children to follow the footsteps of the parents.

With the occupational category of operatives and kindred workers, the parents' occupations here consisted of 5.1 per cent of the labor force, and with the dropouts it was 10.3 per cent. This category composed 15.1 per cent and 18.0 per cent of the Oklahoma and United States labor force, respectively. Both the graduate and dropout classes were considerably below the state and national labor force percentages for this occupational group. The difference here is hard to explain in that one would normally expect the children of such workers to follow to some degree the

occupational class of their parents.

Service workers, including private household, made up 2.3 per cent and 4.2 per cent of the total of the parents' occupations of the graduates and dropouts, respectively. The state percentage for this group was 12.1 per cent, and for the United States it was 12.5 per cent. The graduate and the dropout percentages were both below the two base percentages. The discrepancy here might be explained in part by the fact that many of the service workers and private household workers were women, and the classification used is that of parents' occupation--in most cases that of the father.

The parents of the graduates and dropouts who were laborers, except farm and mine, made up 20.6 per cent and 18.8 per cent of the total, respectively. For the state of Oklahoma, this occupational group made up 5.1 per cent of the labor force and for the nation it made up 5.5 per cent of the labor force. Both the graduate and the dropout groups were significantly higher than the two base groups. No doubt, upward occupational pressure possibly exists here which encourages the children to get at least more education than the parents. And with the value system which exists in this strata, many people seek vocational or technical education instead of more academically orientated education.

Of the parents of the graduates, 23.5 per cent of them were farmers, farm managers, laborers, or foremen, and

21.2 per cent of the dropouts were in this occupational class. Only 9.3 per cent of the Oklahoma labor force is still in this category and 8.1 per cent of the United States labor force. The push from farm is readily apparent here. The percentages for both the graduates' and dropouts' parents in this category was higher than the two base amounts.

The Dictionary of Occupational Titles was used to classify the occupations of the parents into the major occupational categories. In most of the comparisons, the parents' percentages of the graduates and dropouts are closer to each other than they are to either base figures indicating that, probably, even though there are large discrepancies between them and the base figures, that they are generally representative of the student body.

Graduates and First-Time Freshmen's Parents and Oklahoma's Families by Income

A factor, discussed briefly before, which bears heavily upon whether a student attends an institution of higher education and what kind of institution it is, is the income level of his parents. The general rule is that the higher the family income, the more likely the student will seek more education and more academically oriented education.

As might be expected, the parental income of the Oklahoma State Tech graduates was considerably lower than the all-Oklahoma state institution average (Table 24). There were 59.7 per cent of the graduates' parents in the "below $5,000"

TABLE 24

DISTRIBUTION OF FAMILY INCOME OF FALL 1962 FIRST-TIME FRESHMEN IN THE OKLAHOMA STATE SYSTEM OF HIGHER EDUCATION, SUMMER 1966 OKLAHOMA STATE TECH GRADUATES, AND OKLAHOMA FAMILIES, 1960

Institution or Category	Family Income					
	Below $5,000		$5,000 to $9,999		$10,000 and above	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
OU	345	16.3	1,048	49.6	719	34.1
OSU	527	22.9	1,264	55.0	508	22.1
CSC	355	35.0	558	55.1	100	9.9
ECSC	158	44.4	177	49.7	21	5.9
NESC	247	37.4	332	50.3	81	12.3
NWSC	117	35.6	182	55.3	30	9.1
SESC	154	51.0	124	41.1	24	7.9
SWSC	204	36.0	296	52.2	67	11.8
OCW	44	29.3	85	56.7	21	14.0
PAMC	52	24.5	114	53.8	46	21.7
LU	122	70.5	48	27.8	3	1.7
Cameron	194	39.5	245	49.9	52	10.6
Connors	93	57.4	64	39.5	5	3.1
Eastern	173	58.5	109	36.8	14	4.7
Murray	98	52.4	81	43.3	8	4.3
NEOAMC	189	38.5	250	50.9	52	10.6
NOJC	80	30.5	160	61.1	22	8.4
State total or average	3,171	31.2	5,185	51.1	1,796	17.7
Summer 1966 OST graduates	114	59.7	50	26.2	27	14.1

TABLE 24--Continued

Institution or Category	Family Income					
	Below $5,000		$5,000 to $9,999		$10,000 and above	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
1960 Oklahoma population	333,532	54.4	217,351	35.5	61,908	10.1

Source: Compiled and computed from John J. Coffelt and Dan S. Hobbs, In and Out of College (Oklahoma City: Oklahoma State Regents for Higher Education, 1964), p. 54; pre-graduation questionnaire given to 1966 Summer Oklahoma State Tech graduates; and U.S. Bureau of Census, United States Census of Population, 1960; General Social and Economic Characteristics, Oklahoma, Final Report PC (1)-38c, Table 139.

category, 26.2 per cent in the "$5,000 to $9,999" category, and 14.4 per cent in the "$10,000 and above" category. For the parents of the 1962 first-time freshmen in the Oklahoma state system of higher education, there were 31.2 per cent in the "below $5,000" category, 51.1 per cent in the "$5,000 to $10,000" category, and 17.7 per cent in the "$10,000 and above" category. In 1960, 54.4 per cent of Oklahoma's families had less than $5,000 in income, 35.5 per cent had incomes of $5,000 to $10,000, and 10.1 per cent had incomes above $10,000.

Only Langston University had more students' parents "below $5,000", 70.5 per cent, than Oklahoma State Tech. And in the "$5,000 to $10,000" bracket, no institution had a smaller percentage of its students' parents in this category than Oklahoma State Tech. However, only three institutions had a higher percentage of students' parents in the "$10,000 and above" category. They were the University of Oklahoma, Oklahoma State University, and Panhandle A and M College.

If income bore no relationship to education, slightly more than one-half of the students in Oklahoma state higher education institutions should have come from families earning less than $5,000 per year. However, only one-third of the first-time freshmen came from that group. There seems to be some discrimination against these young people whose parents earn only a marginal income and do not have sufficient surplus funds to afford a college education for their children. This

factor, no doubt, encourages many students to seek vocational or technical education which is shorter in length and, therefore, less costly to obtain. The parental income of Oklahoma State Tech's graduates is probably biased upward from what it would be for the general student body since the same information was not collected on the dropouts. However, the results are sufficient to demonstrate the differences in income distribution which exists in comparison to the students' parents of other higher education institutions.

Job Prospects of Graduates

Of 180 responses to the pre-graduation questionnaire on job prospects, 91 or 50.6 per cent reported that they had employment to commence immediately upon graduation (Table 25). Of this 91, 94.5 per cent were males and 5.5 per cent were females. Those looking for a job at graduation accounted for 85, 47.2 per cent of the total, and 4 said that they were going to take time off before looking for a job. Of those looking for jobs at graduation 74.1 per cent were men and 25.9 per cent were women. Of the 4 who were going to take time off before looking for a job, 3 were men and one was a woman. A higher percentage of men had jobs at graduation than women. This can be accounted for because many of the men were married and, therefore, needed immediate income to support their families.

TABLE 25

JOB PROSPECTS AT GRADUATION OF OKLAHOMA STATE TECH
SUMMER 1966 GRADUATES

Employment Status	Male		Female		Total		Per Cent of Sub-Total
	Number	Per Cent	Number	Per Cent	Number	Per Cent	
Have job at graduation	86	94.5	5	5.5	91	100.0	50.6
Looking for job at graduation	63	74.1	22	25.9	85	100.0	47.2
Will take time off before looking for job	3	75.0	1	25.0	4	100.0	2.2
Sub-Total	152	84.4	28	15.6	180	100.0	100.0
No Responses	30	100.0	--	--	30	100.0	
Grand Total	182	86.7	28	13.3	210	100.0	

Source: Pre-graduation questionnaire given to Summer 1966 Oklahoma State Tech graduates.

Job Expectations of Graduates Who Did Not Have a Job Lined up as of Graduation

There were 83 responses by graduates who did not have jobs waiting for them. To the question, "Do you think that you will find a job which will use your Oklahoma State Tech training?" two, 2.4 per cent of the total of 83, replied that they would not; 52, 62.7 per cent, replied that they would find a job in Oklahoma which would use their training; and 29, 34.9 per cent, said that they would find a job, but it would not be in Oklahoma (Table 26). Possibly, some of the people who had not found a job yet at graduation felt that they would have to seek the out-of-state jobs after their graduation.

Concerning "where they were predominantly looking for work," 23, for 27.7 per cent of the total of 83, said that they were looking in their hometown areas; 4, for 4.8 per cent, said that they were looking in the Okmulgee area which had not been their hometown; 28, for 33.7 per cent, said that they were looking in a metropolitan area which had not been their hometown; and 28, for 33.7 per cent, said that they were looking out-of-state, in a state not of their origin.

To a question on pecuniary enticements, "If you had two jobs available in a given field of training what would you do, stay in Oklahoma or move to another state for 50 cents more per hour?" 45, or 54.2 per cent of the total, replied that they would stay in Oklahoma and 38, or 45.8 per cent, said that they would move for the additional amount.

TABLE 26

JOB EXPECTATIONS OF OKLAHOMA STATE TECH SUMMER 1966 GRADUATES
WHO DID NOT HAVE A JOB LINED UP AS OF GRADUATION

Job Expectation	Response								Number of Respondents	
Do you think that you will find a job which will use your Oklahoma State Tech training?	"No"		"Yes, in Oklahoma"		"Yes, in another state"				83	100.0
	Number	Per Cent	Number	Per Cent	Number	Per Cent				
	2	2.4	52	62.7	29	34.9				
Where are you predominantly looking for work?	"Hometown area"		"Okmulgee area"[1]		"Metropolitan area"[2]		"Out-of-state"		83	100.0
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent		
	23	27.7	4	4.8	28	33.7	28	33.7		
If you had two jobs available in your field of training, what would you do?	"Stay in Oklahoma"		"Move to another state for 50 cents more an hour"						83	100.0
	Number	Per Cent	Number	Per Cent						
	45	54.2	38	45.8						
Where will you prefer working?	"In Oklahoma"		"Outside of Oklahoma"						83	100.0
	Number	Per Cent	Number	Per Cent						
	48	57.8	35	42.2						
What are your chances of a job in the field in which you are being trained?	"Excellent"		"Good"		"Fair"		"Poor"		83	100.0
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent		
	40	48.2	33	39.8	10	12.0	--	--		

TABLE 26--Continued

Job Expectation	Response				Number of Respondents	
	"In Oklahoma"		"Outside of Oklahoma"		Number	Per Cent
	Number	Per Cent	Number	Per Cent		
Where are your chances better for a job in your field?	28	33.7	55	66.3	83	100.0

Source: Pre-graduation questionnaire given to Summer 1966 Oklahoma State Tech graduates.

Totals may not add to 100.0 because of rounding.

[1]If hometown area is Okmulgee, then the hometown area should be "checked."

[2]If metropolitan area is hometown area, then the hometown area should be "checked."

As to geographic preference, 57.8 per cent or 48 said that they preferred staying in Oklahoma while 42.2 per cent or 35 said that they preferred working outside of Oklahoma.

The question, "What are your chances of a job in the field in which you are being trained?" received 40 responses of "excellent," or 48.2 per cent of the total of 83, 33 responses of "good" for 39.8 per cent, and 10 responses of "fair" for 12.0 per cent. No "poor" responses were received.

A total of 28 respondents, 33.7 per cent of the number of responses received, indicated that their chances were better for a job in their field in Oklahoma than elsewhere. However, 55, for a per cent of 66.3, said that their chances were better outside of Oklahoma.

From the above responses some indication is evident that many of the students who did not have jobs at graduation did not feel that they would find jobs in Oklahoma.

Employment Status of Graduates Six Months After Graduation

Six months after graduation, 113 graduates responded that they had jobs (Table 27). Of these, 98 or 86.7 per cent were men and 15 or 13.3 per cent were women. These percentages are the same as that of the whole graduating class. Those graduates responding that they did not have jobs numbered 40. Of these, 34 or 85.0 per cent were men and 15.0 per cent were women. The number of no respondents totaled 57. Of these,

TABLE 27

EMPLOYMENT STATUS OF OKLAHOMA STATE TECH SUMMER 1966 GRADUATES SIX MONTHS AFTER GRADUATION

Employment Status	Male		Female		Total		Per Cent of Sub-Total
	Number	Per Cent	Number	Per Cent	Number	Per Cent	
Have job	98	86.7	15	13.3	113	100.0	73.9
Do not have job	34	85.0	6	15.0	40	100.0	26.1
Sub-total	132	86.3	21	13.7	153	100.0	100.0
No responses	50	87.7	7	12.3	57	100.0	
Grand total	182	86.7	28	13.3	210	100.0	

Source: Post-graduation questionnaire given to Summer 1966 Oklahoma State Tech graduates.

50 or 87.7 per cent were men and 7 or 12.3 per cent were women. All of these percentages are close and compare favorably with the graduating class ratio of men to women.

Of the 40 respondents who reported that they did not have jobs six months after graduation, 21 men were in the military, 4 men and 3 women were furthering their education, and one was a housewife. This left 11 of the respondents unemployed at that particular time. This was 7.2 per cent of the total number of respondents.[6]

Employment Status of Graduates by Geographic Origin

Of the 113 employed, 99 or 87.6 per cent of these originated within Oklahoma, and 14 or 12.4 per cent originated from out-of-state (Table 28). These percentages compare similarly with the geographic origin of the graduating class (Table 21). Of those not having a job, 33 or 82.5 per cent were from Oklahoma, and 7 or 17.5 per cent were from out-of-state. Apparently, students from Oklahoma were able to obtain jobs just as readily as students from out-of-state.

However, of these 113 positions filled by these graduates, 71 or 62.8 per cent were located in Oklahoma, and 42 or 37.2 per cent were located outside of Oklahoma.[7] This compares unfavorably with the geographic origin of the

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[6]Post-graduation questionnaire given to Summer 1966 Oklahoma State Tech graduates.

[7]Ibid.

TABLE 28

EMPLOYMENT STATUS OF SUMMER 1966 OKLAHOMA STATE TECH GRADUATES AS OF FEBRUARY 12, 1967, BY GEOGRAPHIC ORIGIN

Origin	No Data		Have Job		Have no Job		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Oklahoma	51	27.8	99	54.1	33	18.1	183	100.0
Out-of-state	6	22.2	14	51.9	7	25.9	27	100.0
Total or average	57	27.2	113	53.8	40	19.0	210	100.0

Source: For Oklahoma-origin graduates, Oklahoma State Tech Registrar's Office and for employment status from post-graduation questionnaire given to Summer 1966 Oklahoma State Tech graduates.

graduates, 87.1 per cent coming from Oklahoma and 12.9 per cent coming from out-of-state (Table 21).

The number of Oklahoma-origin graduates who had jobs and who did not live in Tulsa or Oklahoma County before coming to Oklahoma State Tech numbered 82. Of these 82 students, 13 or 15.9 per cent moved to Tulsa County, and 9 or 10.9 per cent moved to Oklahoma County. No appreciable amount moved to Lawton, the other metropolitan area. A total of 22 or 26.8 per cent moved to these two counties to take employment there.

Employment Status by Rural Versus Urban Background

Of the 99 Oklahoma-origin graduates who responded and said that they had jobs, 41 or 41.4 per cent were from a rural background, and 58 or 58.6 per cent were from an urban background (Table 29). The number of rural background graduates who stayed in Oklahoma was 26 or 63.4 per cent and 15 or 36.6 per cent left Oklahoma for employment. The number of urban background graduates who stayed in Oklahoma was 40 or 69.0 per cent and 18 or 31.0 per cent who left Oklahoma for employment.

Approximately two-thirds of the responding graduates stayed in Oklahoma and one-third left Oklahoma for employment. The percentage of rural background graduates who stayed in Oklahoma was slightly less than this ratio, and the percentages of urban background graduates who stayed was slightly

TABLE 29

NUMBER OF OKLAHOMA-ORIGIN OKLAHOMA STATE TECH SUMMER 1966 GRADUATES WHO STAYED IN OKLAHOMA OR LEFT BY RURAL VERSUS URBAN BACKGROUND

Category	Stayed in Oklahoma		Left Oklahoma		Total	
	Respondents	Per Cent	Respondents	Per Cent	Respondents	Per Cent
Rural	26	63.4	15	36.6	41	41.4
Urban	40	69.0	18	31.0	58	58.6
Total or Average	66	66.7	33	33.3	99	100.0

Source: For Oklahoma-origin graduates who had rural or urban background, Oklahoma State Tech Registrar's Office, and for those who stayed in Oklahoma or left, post-graduation questionnaire given to Summer 1966 Oklahoma State Tech graduates.

greater than this ratio. However, it would be difficult to say from this evidence that the rural background vocational-technical school graduate is more mobile than urban background graduates.

Methods Used to Obtain Jobs by Graduates

The methods used by graduates who had jobs at graduation and for those who did not have jobs at graduation were compared to the United States work force category having 1 to 3 years of college. This group was the most comparable to vocational-technical school graduates having 4 to 24 months of education.

By far the two most important sources of jobs for the labor force with 1 to 3 years of college were to apply directly and through friends and relatives. The former method comprised 42.7 per cent and the latter 28.5 per cent of the sources of jobs. The state employment agency supplied 11.7 per cent of the leads and the school 8.3 per cent. The other three categories provided the remaining 8.8 per cent leads (Table 30).

For the 92 graduates who had jobs, 51.1 per cent of the jobs were found through the school. The next highest source of jobs was the state employment service with 15.2 per cent. Friends or relatives accounted for 13.0 per cent, and 12.0 per cent applied directly. Ads provided 5.4 per cent of the jobs. No assistance was received from private employment services. "Other" sources supplied 3.3 per cent

TABLE 30

METHODS USED TO OBTAIN JOBS BY OKLAHOMA STATE TECH 1966 SUMMER GRADUATES AND THOSE PEOPLE IN THE UNITED STATES WORK FORCE WITH 1 to 3 YEARS OF COLLEGE

Category	Through School		Applied Directly		Friends or Relatives		Answered Ad		State Employment Office		Private Employment Office		Other		Totals	
	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent
United States work force with 1 to 3 years of college	--	8.3	--	42.7	--	28.5	--	1.0	--	11.7	--	4.9	--	2.8	--	100.0
Graduates who had jobs at graduation	47	51.1	11	12.0	12	13.0	5	5.4	14	15.2	--	--	3	3.3	92	100.0
Graduates who did not have jobs at graduation	38	46.3	3	3.7	9	11.0	3	3.7	29	35.4	--	--	--	--	82	100.0

Source: For the United States work force with 1 to 3 years of college Manpower Report of the President and a Report on Manpower Requirements, Resources, Utilization, and Training (Washington: Government Printing Office) March, 1966, p. 94. and for the graduates from the pre-graduation questionnaire given to Summer 1966 Oklahoma State Tech graduates.

*For graduates not having jobs at graduation, the method indicated is the one which was considered to be of the most value in getting a job.

**Totals may not add to 100.0 because of rounding.

***Absolute numbers not available for those people in the United States work force with 1 to 3 years of college.

of the jobs for the graduates who had jobs at graduation.

For the 82 graduates who did not have jobs at graduation, the method considered to be of the most value in getting a job was through the school. It received 46.3 per cent of the responses. The next most important method was that of the state employment service. It received 35.4 per cent of the responses. Friends or relatives accounted for 11.0 per cent of the responses. Only 3.7 per cent responded to either "applying directly" or "answering an ad." Private employment offices and "other" sources received no responses from the graduates who did not have jobs at graduation. It is noteworthy that even though these graduates who had not found jobs as of graduation, they still considered the school to be the most important method of getting a job. In fact, the school as a source of jobs was about as important to them as it was to those graduates who already had jobs at graduation.

Employment Characteristics of Graduates

About 23 or one-fifth of the responding graduates had changed jobs from the original job they had taken immediately after graduation (Table 31).

The number of employed responding graduates who felt that their job made use of their Oklahoma State Tech training was 99 or 87.6 per cent of the total. This indicates high exploitation of the education and training which they received. However, 33 or 29.2 per cent said that the training had not

TABLE 31

EMPLOYMENT CHARACTERISTICS OF OKLAHOMA STATE TECH SUMMER 1966 GRADUATES WHO HAD JOBS SIX MONTHS AFTER GRADUATION

Employment Characteristic	Response "Yes" Number	Response "Yes" Per Cent	Response "No" Number	Response "No" Per Cent	Number of Respondents Number	Number of Respondents Per Cent
Is your job with the same firm that you started with after graduation from Oklahoma State Tech?	90	79.6	23	20.4	113	100.0
Does your job make use of your Oklahoma State Tech training?	99	87.6	14	12.4	113	100.0
Has the training which you received at Oklahoma State Tech been sufficient for the type of work which you are in?	80	70.8	33	29.2	113	100.0
Should your training at Oklahoma State Tech have been longer?	37	32.7	76	67.3	113	100.0
Are you satisfied with your present job?	78	69.0	35	31.0	113	100.0

Source: Post-graduation questionnaire given to Oklahoma State Tech Summer 1966 graduates.

been sufficient for the type of work which they were in. To further support this, about two-thirds said that the training could have been longer.

Only 78 or 69.0 per cent said that they were satisfied with their jobs while 35 or 31.0 per cent said that they were not satisfied with their jobs. However, this dissatisfaction could encompass many factors, including pay, working conditions, geographic location, and others.

Major Occupational Categories of Graduates Before and Six Months After Graduation

The occupations of Oklahoma State Tech graduates who were employed before and six months after graduation are shown in Table 32. The Dictionary of Occupational Titles was used as the classifying device according to the occupational titles listed by the graduates.

No workers were in the professional, technical, or kindred class before training, but after training 8 or 7.1 per cent were in this major category. In the class of managers, officials, and proprietors, except farm, there were 4 or 4.2 per cent before graduation, and it decreased to 3 or 2.7 per cent six months after graduation. Clerical and kindred workers accounted for 5 or 5.3 per cent before graduation and reached 17 or 15.0 per cent six months after graduation. Sales workers accounted for only 3 or 3.2 per cent of the total before graduation and 5 or 4.4 per cent after. There were only 7 or 7.4 per cent in the craftsmen, foremen,

TABLE 32

OCCUPATIONS OF OKLAHOMA STATE TECH SUMMER 1966 GRADUATES BEFORE AND AFTER SIX MONTHS TRAINING

Major Occupational Category	Before Oklahoma State Tech Training		After Oklahoma State Tech Training	
	Number	Per Cent	Number	Per Cent
Professional, Technical, and Kindred Workers	0	0	8	7.1
Manager, Officials, and Proprietors, Except Farm	4	4.2	3	2.7
Clerical and Kindred Workers	5	5.3	17	15.0
Sales Workers	3	3.2	5	4.4
Craftsmen, Foremen, and Kindred Workers	7	7.4	56	49.8
Operatives and Kindred Workers	11	11.6	17	15.0
Service Workers, Including Private Household	10	10.5	5	4.4
Laborers, Except Farm and Mine	50	52.6	2	1.8
Farmers and Farm Managers, Laborers, and Foremen	5	5.3	0	0
Number of Respondents Employed	95	100.0	113	100.0

Source: Occupation before Oklahoma State Tech Training from pre-graduation questionnaire and occupation after Oklahoma State Tech training from post-graduation questionnaire given to Oklahoma State Tech Summer 1966 graduates.

Totals may not add to 100.0 per cent because of rounding.

and kindred worker class before graduation. After graduation there were 56 or 49.6 per cent in this group. Operatives and kindred workers numbered 11 or 11.6 per cent before and 17 or 15.0 per cent after graduation. There were 10 or 10.5 per cent service workers, including private household before graduation and 5 or 4.4 per cent after. Laborers, except farm and mine, as a group totaled 50 or 52.6 per cent before graduation. Only 2 or 1.8 per cent were employed in this category after graduation. There were 5 or 5.3 per cent who were in the group called farmers and farm managers, laborers, and foremen. But after graduation there were none in this group.

Most of the courses of training at Oklahoma State Tech are to train people in the skilled trades, crafts, and technical occupations. The category showing the greatest per cent of workers after graduation was that of craftsmen, foremen, and kindred workers with 49.6 per cent. There were two other important categories. They were clerical and kindred workers and operatives and kindred workers with 15.0 per cent each. Only 2 or 1.8 per cent of the graduates remained in the category which was the largest before graduation, that of laborers, except farm and mine.

From the above description of the occupations of the graduates before and six months after graduation, it is evident that there was considerable upward occupational mobility. However, it is possible that the number in the more highly

skilled occupations is not as great as was reported. Many of the respondents at times gave rather general titles for their employment positions which might not have been appropriate for their actual work and duties. It is possible that many of them were trying to upgrade their positions or even more likely that they did not know the actual title for their job duties. But it is evident though that considerable upward occupational mobility did occur with the graduates due to the training and education they received at Oklahoma State Tech.

Monthly Income of Graduates by Sex

Income data was received from 109 out of the 113 graduates who responded to the post-graduation questionnaire indicating that they had a job six months after graduation. Income was requested on a monthly basis.

The average monthly pay was considerably greater for men than it was for women (Table 33). The average monthly

TABLE 33

MONTHLY INCOME OF OKLAHOMA STATE TECH SUMMER 1966 GRADUATES BY SEX

Sex	Number of Respondents	Average Monthly Pay for Each Sex
Male	93	$419.08
Female	16	251.56
Total	109	394.47

Source: Post-graduation questionnaire given to Summer 1966 Oklahoma State Tech graduates.

pay for men was $419.08, and the average monthly pay for women was $251.56. The average monthly pay for all graduates was $394.47. The large difference between the pay of men and women can be attributed to many factors including possible sexual discrimination, the type of work that they were in, geographic location, and other factors.

Monthly Income of Graduates by Race

White graduates had the highest average monthly salary of all graduates (Table 34). Indian graduates were next with Negro graduates being the lowest on the income ladder. No responses were received from "other" races. The average monthly salary for white graduates was $413.76, for Negro graduates it was $254.00, and for Indians it was $363.40. The average monthly salary for all graduates was $394.47.

TABLE 34

MONTHLY INCOME OF OKLAHOMA STATE TECH SUMMER 1966 GRADUATES BY RACE

Race	Number of Respondents	Average Monthly Pay for Each Race
Indian	10	$363.40
Negro	10	254.00
White	89	413.76
Other	--	--
Total	109	394.47

Source: Post-graduation questionnaire given to Summer 1966 Oklahoma State Tech graduates.

Even with a certain amount of vocational or technical skills, there still seems to be a great deal of income differential between the various races. Part of this is probably due to racial discrimination; however, type of work, geographic location, and other factors also bear heavily on this differential.

Monthly Income of Graduates by Rural Versus Urban Background

Rural background graduates had a higher monthly pay than urban background graduates (Table 35). The average monthly pay for rural background graduates was $399.75, and for the urban background graduates it was $390.76. The average monthly salary for all graduates was $394.47.

TABLE 35

MONTHLY INCOME OF OKLAHOMA STATE TECH SUMMER 1966 GRADUATES BY RURAL VERSUS URBAN BACKGROUND

Background	Number of Respondents	Average Monthly Pay for Each
Rural	44	$399.75
Urban	65	390.76
Total or Average	109	394.47

Source: Post-graduation questionnaire given to Summer 1966 Oklahoma State Tech graduates.

It would be difficult to say that the rural background graduate had an inherent advantage over the urban

background graduate because the above differential is too small. This differential can be explained, in part, by the fact that a higher percentage of rural graduates migrated out-of-state than urban background graduates. The average monthly salary of out-of-state employment was higher than in-state employment (Table 36). In addition many of the rural background graduates took diesel mechanics training which was one of the highest paying areas of training (Table 37).

TABLE 36

MONTHLY INCOME OF OKLAHOMA STATE TECH SUMMER 1966 GRADUATES BY GEOGRAPHIC LOCATION AFTER GRADUATION

Location	Respondents Number	Per Cent	Average Monthly Pay for Each Location
Oklahoma employment	70	64.2	$354.70
Out-of-state employment	39	35.8	465.85
Total or average	109	100.0	$394.47

Source: Post-graduation questionnaire given to Summer 1966 Oklahoma State Tech graduates.

Monthly Income of Graduates by Disabled Versus non-Disabled

Oklahoma-origin disabled graduates had a higher average monthly salary than the average graduate (Table 38). However, the out-of-state origin disabled graduate received a considerably lower average monthly salary than did his Oklahoma counterpart.

TABLE 37

MONTHLY INCOME OF OKLAHOMA STATE TECH SUMMER 1966 GRADUATES BY AREA OF TRAINING

Area of training	Number of Respondents	Average Monthly Pay for Each Area of Training
Accounting and bookkeeping	6	$374.17
Appliance repair	2	270.00
Auto body	1	380.00
Auto machinist	4	455.00
Auto mechanics	12	390.83
Auto parts	3	246.67
Auto service management	2	450.00
Commercial art	1	230.00
Culinary arts	5	231.31
Diesel mechanics	16	501.31
Drafting	9	420.56
Electrical maintenance	6	480.83
Furniture upholstery	2	373.00
General business	2	400.00
Industrial electronics	9	461.67
Keypunch	8	276.00
Lithography	3	306.67
Plumbing	1	750.00
Refrigeration and air cond.	10	406.70
Secretarial	2	287.50
Stenography	2	175.00
Teletypesetter	1	304.00
Television electronics	2	337.50
Total	109	$394.47

Source: Post-graduation questionnaire given to Summer 1966 Oklahoma State Tech graduates.

The average monthly salary for disabled Oklahoma-origin graduates was $429.43. The average monthly salary for out-of-state disabled graduates was $287.50. The average monthly salary for all disabled graduates was $397.89.

TABLE 38

MONTHLY INCOME OF OKLAHOMA STATE TECH SUMMER 1966 GRADUATES BY DISABLED VERSUS NON-DISABLED

Category	Number of Respondents	Average Monthly Pay for Each Category
Disabled, Oklahoma origin	14	$429.43
Disabled, out-of-state origin	4	287.50
Total or average of disabled	18	397.89
Non-disabled, Oklahoma and out-of-state origin	91	393.79
Total or average of all graduates	109	394.47

Source: Post-graduation questionnaire given to Summer 1966 Oklahoma State Tech graduates.

The average monthly salary for non-disabled Oklahoma and out-of-state-origin graduates was $393.79. The average monthly salary for all graduates was $384.47.

The income differential which exists between the Oklahoma-origin and out-of-state-origin disabled student could be due in large part from the counseling services which are more readily available to the Oklahoma-origin disabled graduates through the state office of Vocational Rehabilitation. Continual and follow-up counseling is available for the Oklahoma disabled students. This same reason could also explain why the Oklahoma-origin disabled graduates received

a higher average monthly than the average graduate.

Monthly Income of Graduates by Geographic Location of Employment

Out-of-state employment gave a higher average monthly income than Oklahoma employment did (Table 36). In fact, about a $90.00 differential existed between those employed out-of-state and in Oklahoma. Oklahoma employment averaged $354.70 per month for all graduates employed there. Out-of-state employment averaged $465.85 per month for all graduates in this category. The average monthly income for all graduates was $394.47.

It was discussed previously that a higher percentage of graduates left Oklahoma than originated from Oklahoma. No doubt much of the migration to out-of-state areas was due to this higher income differential which existed out-of-state.

Monthly Income of Graduates by Selected Geographic Areas of Employment

The average monthly income for selected geographic areas of employment is shown in Table 39. The average monthly income of those graduates going to Tulsa County was $373.89. For Oklahoma County, the average monthly pay for the graduates was $444.67. For Kay County, the county with the next highest number of employed graduates, the average monthly income was $393.00. All of these monthly averages were above the Oklahoma average monthly income of $354.70.

TABLE 39

MONTHLY INCOME OF OKLAHOMA STATE TECH SUMMER 1966 GRADUATES BY SELECTED GEOGRAPHIC LOCATIONS AFTER GRADUATION

Selected Location	Number of Respondents	Average Monthly Pay for Each Selected Location
In-state		
Tulsa County	18	$373.89
Oklahoma County	12	444.67
Kay County	5	393.00
Oklahoma average		$354.70
Out-of-state		
Texas	19	$491.32
California	6	474.67
Missouri	5	526.00
Overall out-of-state average		$465.85

Source: Post-graduation questionnaire given to Summer 1966 Oklahoma State Tech graduates.

For graduates who took out-of-state employment, the average monthly income was $465.85. Graduates going to Texas had an average monthly income of $491.32. Graduates who went to California had an average monthly income of $474.67. For Missouri, the state with the next largest number of employed graduates, the average monthly income was $526.00.

With the wide income differentials which exist between the various geographic areas, it is easy to see why

the percentage of graduates taking out-of-state jobs is as high as it is.

Monthly Income of Graduates by Area of Training

Average monthly income data was received for 23 different areas of training (Table 37). The average monthly salary ranged from $175.00 for stenography to $750.00 for plumbing. The average monthly salary for all areas of training was $394.47.

Accounting and bookkeeping personnel averaged $374.17 per month, auto machinists averaged $455.00 per month, auto mechanics averaged $390.83 per month, culinary arts personnel averaged $231.31 per month, diesel mechanics averaged $501.31 per month, drafting personnel averaged $420.56 per month, electrical maintenance personnel averaged $480.83 per month, industrial electronics personnel averaged $461.67 per month, keypunchers averaged $276.00 per month, and refrigeration and air conditioning personnel averaged $406.70 per month.

There is some indication that the smaller the number of graduates in a field of training, the lower the income. Possibly many of the students are therefore entering the fields offering higher incomes. Two areas generally considered to be technical fields, as opposed to the others being more vocational fields, had higher average monthly salaries than the average graduate. The fields are drafting and industrial electronics with average monthly salaries of $420.56 and $461.67, respectively.

Reasons Why Graduates Trained in Their Particular Fields

Interest was by far the most important reason given by summer 1966 Oklahoma State Tech graduates as one reason why they trained in their particular fields (Table 40). In fact, 155 or 88.1 per cent of the total number of respondents of 176 put this as one of the reasons for their training in their particular fields. The next most important reason for being in their particular field was high pay. There were 98 or 55.7 per cent who responded as such here. Working conditions was the next most important reason with 68 responses for 38.6 per cent. Aptitude was listed by 63 or 35.8 per cent of the students as a reason for training in a field. The graduate's previous occupation was given by 47 or 27.8 per cent as being one of the reasons for training in their fields. A total of 43 or 24.4 per cent listed status and prestige as one of the reasons they were in their fields. According to 20 or 11.4 per cent the fact that friends were also in their field encouraged them to be in it. Father's occupation was given by 13 or 7.4 per cent as to one of the reasons for their being trained in their specialty. "Don't know" and "other" was given by 10 or 5.7 per cent each as to one of the reasons why they were in their particular field of training.

For those that listed high pay as one of the reasons for their being trained in their particular field, the average

TABLE 40

REASONS GIVEN BY SUMMER 1966 OKLAHOMA STATE TECH GRADUATES AS TO WHY THEY ARE TRAINING IN THEIR PARTICULAR FIELD

Reason for Training in Their Field	Yes		No Response		Total Number of Respondents
	Number	Per Cent	Number	Per Cent	
High pay	98	55.7	78	44.3	176
Interest	155	88.1	21	11.9	176
Father's Occupation	13	7.4	163	92.6	176
Previous Occupation	49	27.8	127	72.2	176
Friends here	20	11.4	156	88.6	176
Do not know	10	5.7	166	94.3	176
Working conditions	68	38.6	108	61.4	176
Status and prestige	43	24.4	133	75.6	176
Aptitude	63	35.8	113	64.2	176
Other	10	5.7	166	94.3	176

Source: Pre-graduation questionnaire given to Oklahoma State Tech Summer 1966 graduates.

monthly pay for them was $403.18 for 66 respondents. Those who did not respond to this reason had average monthly pay of $375.97 with 39 respondents.[8]

Notably, 43 or 24.4 per cent said that status and prestige was one of the reasons for their being trained in their field. Low status and prestige has usually been associated with vocational-technical education in the past. Possibly, some improvement in the general picture of vocational-technical training and education is occurring.

Reasons Given by Graduates for Changing Jobs if They Did Change Jobs

Information on the reasons given by graduates six months after graduation for changing jobs if they did change jobs is contained in Table 41. The respondent was requested to indicate only one reason for wanting to change from his present job. A total of 106 responses to this question were received.

The most important reason given for wanting to change jobs was better opportunities. It received 45 or 42.5 per cent of the responses. The next most important reason was that of higher pay with 31 or 29.2 per cent. More challenging work received 11 or 10.4 per cent of the responses for wanting to change jobs. Following that was more desirable geographic location as a reason for changing jobs with 9 or 8.5 per cent

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[8]Source: Post-graduation questionnaire given to Summer 1966 Oklahoma State Tech graduates.

TABLE 41

REASONS GIVEN SIX MONTHS AFTER GRADUATION BY OKLAHOMA STATE TECH GRADUATES WHY THEY WOULD CHANGE JOBS IF THEY DID CHANGE JOBS

Reason	Male		Female		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Higher salary	25	80.6	6	19.4	31	29.2
More desirable geographic location	7	78.8	2	22.2	9	8.5
Better opportunities	42	93.3	3	6.7	45	42.5
Make better use of your training	6	75.0	2	25.0	8	7.5
More challenging work	8	72.7	3	27.3	11	10.4
Other reasons	1	100.0	-	--	2	1.9
Total or average	90	84.9	16	15.1	106	100.0

Source: Post-graduation questionnaire given to Summer 1966 Oklahoma State Tech graduates.

of the responses. The number of people who would change jobs because they wanted to make better use of their training numbered 8 or 7.5 per cent. There were 2 "other" responses.

Future Job Expectations of Graduates

Future job expectations of the graduates are shown in Table 42. The graduates were requested to include this information on the pre-graduation questionnaire whether or not they had jobs at graduation. The job that was to be considered was that one which they had or would have immediately after graduation. There were 170 responses to this section on the pre-graduation questionnaire. On the follow-up questionnaire they were also requested to supply this information, but only if they had jobs. There were 100 responses to this section on the post-graduation questionnaire.

There was little change in the future job expectations of the graduates between graduation and six months later concerning how they viewed the chances that they would "keep working for their first employer permanently." About 20 per cent said before and after graduation that they thought the chances were "excellent" that they would keep working for their first employer permanently. Another 40 per cent said before and after graduation they were "good." There was some change in the response to "fair." About 27 per cent said that the chances were "fair" before graduation, but only 16 per cent said it was "fair" after graduation. The opposite change became evident in the "poor" category where the

TABLE 42

FUTURE JOB EXPECTATIONS OF OKLAHOMA STATE TECH SUMMER 1966 GRADUATES

Chances given by graduates that they will:	Questionnaire	Expectation										Total
		Excellent		Good		Fair		Poor		Very Poor		
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	
Keep working for first employer permanently	Pre-graduation	34	20.0	69	40.6	46	27.1	10	5.9	11	6.5	170
	Post-graduation	21	21.0	43	43.0	16	16.0	13	13.0	7	7.0	100
Stay in the same type of work for which they were trained	Pre-graduation	67	39.4	68	40.0	26	15.3	6	3.5	3	1.8	170
	Post-graduation	34	34.0	41	41.0	13	13.0	7	7.0	5	5.0	100
Move into a better job with the same employer	Pre-graduation	47	27.6	48	40.0	29	17.1	17	10.0	9	5.3	170
	Post-graduation	23	23.0	39	39.0	13	13.0	15	15.0	10	10.0	100
Move into a better job, but with another employer	Pre-graduation	12	7.1	49	28.8	49	28.8	40	23.5	20	11.8	170
	Post-graduation	9	9.0	20	20.0	37	37.0	24	24.0	10	10.0	100
Move into another job at the same level with another employer	Pre-graduation	8	4.7	26	15.3	39	22.9	51	30.0	46	27.1	170
	Post-graduation	3	3.0	10	10.0	19	19.0	41	41.0	27	27 0	100

Source: Pre-graduation and post-graduation questionnaires given to Oklahoma State Tech Summer 1966 graduates.

Totals may not add to 100.0 per cent because of rounding.

percentage of responses before graduation was about 6 per cent, but after graduation it had climbed to about 13 per cent. The per cent of "very poor" responses was about 7 per cent on both the pre- and post-graduation questionnaire.

About 40 per cent said before graduation that they thought the chances of their staying in the same type of work for which they had been trained were "excellent." However, this decreased to about 34 per cent after graduation. About 40 per cent listed it as "good" on both the pre- and post-graduation questionnaire. For the category "fair" about 15 per cent listed it before graduation and 13 per cent after graduation. The class "poor" was used 3.5 per cent before and 7.0 per cent after, and the "very poor" class was used 1.8 per cent before and 5.0 per cent after graduation.

About 28 per cent said before graduation and about 23 per cent after graduation that they thought the chances of them moving into a better job with the same employer were "excellent." About 40 per cent listed these chances as "good" on both the pre-graduation and post-graduation questionnaires. For the response "fair" the percentage was about 17 per cent before graduation and 13 per cent after graduation. The "poor" categories had 10 per cent of the responses before graduation and 15 per cent after graduation. About 5 per cent listed the chances as "very poor" before graduation, but this increased to 10 per cent after graduation.

The fourth and fifth questions are inverse or

contrary to the previous three above questions. They should generally show this effect by having increasing percentages going from "excellent" to "very poor" instead of having decreasing percentages going from "excellent" to "very poor" as was the case with the first three questions.

About 7 per cent said before graduation and 9 per cent after graduation that the chances were "excellent" that they would move into a better job with another employer. Such chances were said to be "good" by about 29 per cent before graduation and 20 per cent after graduation. About 29 per cent before graduation and 37 per cent after graduation said they thought they were only "fair." About 24 per cent listed them as "poor" on both questionnaires. About 12 per cent before graduation and 10 per cent after graduation said such chances were "very poor."

About 5 per cent said before graduation and 3 per cent said after graduation that they thought the chances were "excellent" that they would move into another job at the same level with another employer. About 15 per cent said before graduation and 10 per cent after graduation that such chances were "good." About 23 per cent indicated they were "fair" before graduation, and after graduation this percentage was down to 19 per cent. The "poor" category had 30 per cent of the responses before graduation, but after graduation it received 41 per cent of them. For the category, "very poor," it was about 27 per cent both before and after graduation.

In looking at these questions on future job expectations, most of the graduates perceived a high amount of employer and job level stability for themselves. In light of these expectations, it is interesting that about 20 per cent of the graduates had changed jobs by six months after graduation (Table 31).

Perceptions of Job Characteristics by Graduates

Job characteristics as perceived by the graduates before and six months after graduation are shown in Table 43. Nine different characteristics were tested. Each respondent was requested to rank each characteristic as being "very important," "fairly important," or "not important." This information was requested on both the pre-graduation and post-graduation questionnaires. After the data were collected and tabulated, a Mann-Whitney U test was made on each job characteristic.[9] These findings will be discussed after the data have been described.

What the job pays was "very important" to 52.6 per cent on the pre-graduation questionnaire and to 48.8 per cent on the post-graduation questionnaire. It was "fairly important" to 45.7 per cent on the pre-graduation questionnaire and to 50.0 per cent on the post-graduation questionnaire. It was "not very important" to 1.7 per cent on both

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[9]Quinn McNear, Psychological Statistics (New York: John Wiley & Sons, Inc., 1955), pp. 359-60.

TABLE 43

PERCEPTIONS OF JOB CHARACTERISTICS BY OKLAHOMA STATE TECH SUMMER 1966 GRADUATES, BEFORE AND SIX MONTHS AFTER GRADUATION

Job Characteristic	Number of Matchable Replies		Rankings: Very Important Number	Very Important Per Cent	Fairly Important Number	Fairly Important Per Cent	Not Very Important Number	Not Very Important Per Cent	ZU Score (Normal deviation)
What the job pays	116	Pre-graduation	61	52.6	53	45.7	2	1.7	≠0.639
		Post graduation	56	48.3	58	50.0	2	1.7	
How steady the work is	107	Pre-graduation	89	83.2	16	15.0	2	1.8	-1.620
		Post-graduation	97	90.7	9	8.4	1	0.9	
Whether the work is interesting	108	Pre-graduation	86	79.6	20	18.5	2	1.9	-0.201
		Post-graduation	87	80.6	20	18.5	1	0.9	
If the job makes use of your training	108	Pre-graduation	63	58.3	37	34.3	8	7.4	-0.125
		Post-graduation	64	59.3	36	33.3	8	7.4	
Working conditions	111	Pre-graduation	74	66.7	35	31.5	2	1.8	-0.997
		Post-graduation	67	60.4	41	36.9	3	2.7	
Chances of promotion	108	Pre-graduation	80	74.1	25	23.1	3	2.8	≠0.191
		Post-graduation	81	75.0	25	23.1	2	1.9	
What retirement or pension is like	111	Pre-graduation	50	46.3	50	46.3	8	7.4	≠0.141
		Post-graduation	50	46.3	48	44.4	10	9.3	
Whether job has variety	108	Pre-graduation	48	44.4	53	49.1	7	6.5	-2.136
		Post-graduation	64	59.3	39	36.1	5	4.6	
What your fellow workers are like	111	Pre-graduation	58	52.3	48	43.2	5	4.5	≠0.313
		Post-graduation	57	51.4	46	41.4	8	7.2	

TABLE 43--Continued

Job Characteristic	Number of Matchable Replies		Rankings: Very Important Number	Very Important Per Cent	Fairly Important Number	Fairly Important Per Cent	Not Very Important Number	Not Very Important Per Cent	ZU Score (Normal deviation
What your supervisors are like	107	Pre-graduation	73	68.2	34	31.8	0	0.0	≠ 0.898
		Post-graduation	68	63.6	35	32.7	4	3.7	
Reputation of the firm	109	Pre-graduation	75	68.8	27	24.8	7	6.4	≠ 1.004
		Post-graduation	67	61.5	36	33.0	6	5.5	
Fringe benefits	107	Pre-graduation	50	46.7	54	50.5	3	2.8	-0.843
		Post-graduation	57	53.3	46	43.0	4	3.7	

Source: Pre-graduation and post-graduation questionnaire given to Oklahoma State Tech Summer 1966 graduates.

questionnaires. In looking at the shift which took place, income was not quite so important to the graduates after graduation as it was to them before graduation.

To the characteristic, "how steady the work is," 83.2 per cent on the pre-graduation questionnaire and 90.7 per cent on the post-graduation questionnaire thought it was "very important." Steady work was "fairly important" to 15.0 per cent before graduation and to 8.4 per cent after graduation. Only 1.8 per cent on the pre-graduation questionnaire and 0.9 per cent on the post-graduation listed it as "not very important." Graduates found steady work somewhat more important to them after they were on the job as opposed to before graduation.

Whether the work was interesting was "very important" to 79.6 per cent before graduation and to 80.6 per cent after graduation. On both the pre-graduation and post-graduation questionnaires, 18.5 per cent found this characteristic "fairly important." The ranking, "not very important," received 1.9 per cent on the pre-graduation questionnaire and 0.9 per cent on the post-graduation questionnaire. Practically no change took place as to how the graduates perceived the importance of whether or not the job was important.

The per cent of graduates who felt it was "very important" that the job make use of their training was 58.3 per cent before graduation and 59.3 per cent after graduation. This characteristic was "fairly important" to 34.3 per cent

before graduation and to 33.3 per cent after graduation. It was "not important" to 7.4 per cent both before and after graduation. No real change took place with this characteristic between graduation and six months later.

Working conditions were "very important" to 66.7 per cent of the graduates before graduation and to 60.4 per cent after graduation. They were "fairly important" to 31.5 per cent before graduation and to 36.9 per cent after graduation. Working conditions were "not very important" to 1.8 per cent before and to 2.7 per cent after graduation. Working conditions became somewhat less important to the graduates between the two time intervals.

The percentage of graduates who felt that the chances of promotion were "very important" to them was 74.1 per cent before and 75.0 per cent after graduation. It was "fairly important" to 23.1 per cent both on the pre-graduation and post-graduation questionnaires. It was "not very important" to 2.8 per cent before and 1.9 per cent after graduation. No appreciable change occurred in regard to this perception.

Retirement or pension was "very important" to 46.3 per cent both before and after graduation. The ranking, "fairly important," received 46.3 per cent before and 44.4 per cent after graduation. "Not very important" received 7.4 per cent before and 9.3 per cent after graduation. The perception of this characteristic was about the same at both testings.

Variety of the job was "very important" to 44.4 per cent of the graduates before graduation and to 59.3 per cent of the graduates after graduation. It was "fairly important" to 49.1 per cent before and 36.1 per cent after graduation. The percentage of graduates who felt it was "not very important" was 6.5 per cent before graduation and 4.6 per cent after graduation. Job variety became appreciably more important to the graduates between graduation time and six months later.

What their fellow workers were like was "very important" to 52.3 per cent before and to 51.4 per cent after graduation. There was a change from 43.2 per cent at graduation to 41.4 per cent later who said that it was "fairly important." The per cent who felt it was "not very important" at graduation was 4.5 per cent and 7.2 per cent said such six months later. No effective change took place with this perception.

The per cent who felt what their supervisors were like was "very important" to 68.2 per cent before graduation and to 63.6 per cent after graduation. What they were like was "fairly important" to 31.8 per cent before graduation and to 32.7 per cent after graduation. No one said that what they were like was "not very important" on the pre-post-graduation questionnaires, but 3.7 per cent said that what they were like was not "very important" on the post-graduation questionnaire. What supervisors were like became

less important to the graduates after they had graduated.

The reputation of the firm as a place to work was "very important" to 68.8 per cent before graduation and to 61.5 per cent after graduation. It was "fairly important" to 24.8 per cent before graduation and to 33.0 per cent after graduation. It was "not very important" to 6.4 per cent before graduation and to 5.5 per cent after graduation. Reputation of the firm as a place to work became less important to the graduates after graduation.

Fringe benefits were "very important" to 46.7 per cent before and to 53.3 per cent after graduation. The percentage of graduates who said they were "fairly important" was 50.5 per cent before graduation and 43.0 per cent after graduation. Fringe benefits were "not very important" to 2.8 per cent before graduation and to 3.7 per cent after graduation. Fringe benefits became slightly more important to the graduates during the six month time interval after graduation.

The results of the Mann-Whitney U tests which were made on each characteristic are found in the far right column of Table 43. The purpose in making this test was to determine if any significant change had occurred in the graduates' perceptions of each job characteristic between the time when the pre-graduation questionnaire was given before graduation and when the post-graduation questionnaire was given six months later. The "ZU" score indicates the normal

deviation. The positive or negative sign indicates the direction of change of importance on how the graduate perceived the characteristic. A positive sign indicates that the characteristic was perceived to be less important six months after graduation than it was immediately before graduation. A negative sign indicates then that the characteristic was perceived to be more important six months after graduation than it was immediately before graduation.

A 5.0 per cent confidence level was set for these tests. Therefore, a ZU score of $\pm$1.96 would be significant. Only one characteristic was found to have a ZU score equal to or greater than this amount. It was "whether the job has variety." Based on the results of these questionnaires, there is some evidence to indicate that the observed differences between the pre-test and post-test results are real. Therefore, the perceptions of the graduates on "the variety of the job" did change, and that there is a significant difference between the perceptions on this characteristic by the graduates before and six months after graduation.

CHAPTER VII

ACADEMIC CHARACTERISTICS OF OKLAHOMA STATE TECH SUMMER 1966 GRADUATES AND DROPOUTS

In this chapter there is a discussion of the academic characteristics of Summer 1966 Oklahoma State Tech graduates and dropouts. Grade averages for shop subjects, related subjects, and all subjects combined are considered. Shop subjects are those of their major concentration or area of training. Related subjects consist of English, mathematics, human relations, and so forth. These averages are compared by sex, race, rural versus urban background, disabled versus non-disabled, level of education, size of high school senior class, high school activities, location of employment, and change in employment after graduation. In addition, the level of education of the graduates and dropouts, the size of the high school senior class, the level of education of the parents, and the personality characteristics of the graduates and dropouts are examined.

The data on the graduates are taken from three sources. They are the pre-graduation questionnaire which was given to the Summer 1966 Oklahoma State Tech graduates immediately before graduation, the post-graduation questionnaire which

was sent to them six months after graduation, and the Registrar's Office at Oklahoma State Tech. The Registrar's Office was the sole source of data for the dropouts.

The various grade-point averages are determined as follows. The grade for each course is multiplied by the course's class hours. For each area, shop and related subjects, these are totaled and then divided by the number of class hours in each area. This then is the grade-point average for the respective area, shop or related subjects. The overall average is determined by adding together course grades times their class hours and then dividing this total by total class hours. If the number of related subject class hours is small or if the grades in the related subjects are low, the grade average of the shop subjects will primarily determine the overall grade-point average. And if the number of related subjects is large or if the grades in the related subjects are high, then they will influence the overall grade-point average more.

Grade-Point Averages by Sex

With the graduates, the grade-point average for shop subjects, 2.69, was lower than the grade-point average for related subjects, 2.72 (Table 44). For the dropouts, the grade-point average for shop subjects was higher than the grade-point average for related subjects, 2.17 to 1.75. This could mean that the dropouts were more manipulatively orientated than were the graduates, and that the graduates were

TABLE 44

GRADE-POINT AVERAGES OF SUMMER 1966 OKLAHOMA STATE TECH GRADUATES AND DROPOUTS BY SEX

Grade-Point Category	Student category	Sex				Total Number of observations	Combined average
		Male		Female			
		Number of observations	Average	Number of observations	Average		
Shop subjects	Graduates	182	2.78	28	2.83	210	2.79
	Dropouts	154	2.15	17	2.34	171	2.17
Related subjects	Graduates	172	2.59	25	3.14	197	2.69
	Dropouts	118	1.72	12	2.03	130	1.75
Overall average	Graduates	182	2.74	28	2.84	210	2.76
	Dropouts	154	2.11	17	2.21	171	2.12

Source: Oklahoma State Tech Registrar's Office.

*Rating System: 4.00 is excellent, 3.00 is good, 2.00 is fair, 1.00 is poor, and 0.00 is unsatisfactory.

more cognitively orientated than were the dropouts.

In shop subjects the female graduates had an average of 2.83 while the male graduates had an average of 2.78. With the dropouts, the females had a grade-point average of 2.34 for shop subjects while the males had an average of 2.15. The difference for the graduates was 0.05 and for the dropouts it was 0.19 for the shop subjects.

For related subjects, the grade-point average difference between males and females for both the graduates and the dropouts was greater than with the shop subjects. Graduate males had a 2.59 average in related subjects. The same average for female graduates was 3.14. The difference was 0.55. Dropout males had a 1.72 grade-point average in related subjects while their female counterparts had a grade-point average of 2.03. There was a difference of 0.31 between the male and female grade-point average for related subjects for the dropouts.

The overall or composite grade-point average for the graduate males was 2.74, and for the female graduates it was 2.84. For the dropouts, the males had an average of 2.11, and the females had an average of 2.21. The difference for the graduates between the males and females was 0.10, and for the dropouts the difference between the males and females was also 0.10.

The graduates had higher grade-point averages than the dropouts in all categories. For both sexes there was a

greater difference between the grade-point average of graduates and dropouts with related subjects than with shop subjects. The graduates had a 2.79 grade-point average in shop subjects while the dropouts had a 2.17 grade-point average in shop subjects. In related subjects, the graduates had a 2.69 grade-point average and the dropouts had a 1.75 grade-point average. The overall grade-point average for graduates was 2.76 and for the dropouts it was 2.12. There was a greater variance between the shop and related subjects' grade-point for the dropouts, 2.17 to 1.75, than there was for the graduates, 2.79 to 2.69.

Grade-Point Averages by Race

With both the graduates and the dropouts, the whites had the highest grade-point average of all races in all subjects (Table 45). Indians had the second highest grade-point average. Again, this was the case for all subjects. Negroes had the lowest grade-point averages in all grade-point areas. The number of "other races" is insufficient to make any generalizations on their grade-point averages.

In shop subjects, white graduates had a grade-point average of 2.84, Indians had a 2.75 grade-point average, and Negro graduates had a 2.42 grade-point average. Graduates of other races had a 2.57 grade-point average in shop subjects. For the dropouts, the grade-point averages of shop subjects were as follows: whites had a grade-point average of 2.20, Indians had a grade-point average of 2.09, and

TABLE 45

GRADE-POINT AVERAGES OF SUMMER 1966 OKLAHOMA STATE TECH GRADUATES AND DROPOUTS BY RACE

Grade-point Category	Student Category	Race: Indian		Negro		White		Other		Total observations	Combined Average
		Number of observations	Average	Number of observations	Average	Number of observations	Average	Number of observations	Average		
Shop subjects	Graduates	23	2.75	15	2.42	169	2.84	3	2.57	210	2.79
	Dropouts	16	2.09	19	1.98	135	2.20	1	3.00	171	2.17
Related subjects	Graduates	21	2.60	14	2.10	159	2.76	3	2.57	197	2.69
	Dropouts	15	1.61	8	1.58	107	1.78	0	--	130	1.75
Overall average	Graduates	23	2.73	15	2.28	169	2.81	3	2.57	210	2.76
	Dropouts	16	2.02	19	1.92	135	2.14	1	3.00	171	2.12

Source: Oklahoma State Tech Registrar's Office.

*Rating System: 4.00 is excellent, 3.00 is good, 2.00 is fair, 1.00 is poor, and 0.00 is unsatisfactory.

Negroes had a grade-point average of 1.98. The combined average for all graduates in shop subjects was 2.79, and it was 2.17 for dropouts.

In the category of related subjects, white graduates had a 2.76 grade-point average, Indian graduates had a 2.60 grade-point average, and Negroes had a 2.10 grade-point average. White dropouts had a 1.78 grade-point average in related subjects, Indians had a 1.61 grade-point average, and Negroes had a 1.56 grade-point average. The combined average for related subjects was 2.69 for graduates and 1.75 for dropouts.

The overall average for graduate whites was 2.81, for Indian graduates it was 2.73, and for Negro graduates it was 2.28. Graduates of other races had a 2.57 overall grade-point average. The overall grade-point average for white dropouts was 2.14, for Indian dropouts it was 2.02, and for Negro dropouts it was 1.92. The combined overall grade-point average was 2.76 for the graduates and for the dropouts it was 2.12.

Grade-Point Averages by Rural Versus Urban Background

Rural background graduates had higher grade-point averages than their urban counterparts in both shop and related subjects (Table 46). Rural dropouts had a lower grade-point average than urban students in shop subjects and a higher grade-point average in related subjects than urban

TABLE 46

GRADE-POINT AVERAGES OF SUMMER 1966 OKLAHOMA STATE TECH GRADUATES AND DROPOUTS BY RURAL VERSUS URBAN BACKGROUND

		Background					
		Rural		Urban			
Grade-point category	Student category	Number of observations	Average	Number of observations	Average	Total observations	Combined Average
Shop subjects	Graduates	79	2.84	131	2.76	210	2.79
	Dropouts	64	2.14	107	2.19	171	2.17
Related subjects	Graduates	73	2.76	124	2.66	197	2.69
	Dropouts	49	1.80	81	1.72	130	1.75
Overall average	Graduates	79	2.82	131	2.72	210	2.76
	Dropouts	64	2.11	107	2.13	171	2.12

Source: Oklahoma State Tech Registrar's Office.

Rating System: 4.00 is excellent, 3.00 is good, 2.00 is fair, 1.00 is poor, and 0.00 is unsatisfactory.

students. The overall average was then lower for rural dropouts as compared to urban dropouts.

The grade-point average in shop subjects for rural graduates was 2.84, and for urban graduates it was 2.76. The combined average for both rural and urban graduates was 2.79 for shop subjects. Rural dropouts had a grade-point average of 2.14 in shop subjects, and the urban dropouts had a 2.19 grade-point average in this area. Their combined average was 2.17 for shop subjects.

In related subjects, the rural graduates and dropouts faired better than their urban counterparts. The grade-point average in related subjects was 2.76 for rural graduates and 2.66 for urban graduates. The combined rural and urban grade-point average for related subjects was 2.69 for graduates. Rural dropouts had a grade-point average of 1.80 and urban dropouts had a grade-point average of 1.72 in this area. The grade-point average in related subjects was 1.75 for all dropouts.

The overall grade-point average for rural graduates was 2.82, and for urban graduates it was 2.72. Their combined average was 2.76. The overall grade-point average for rural dropouts was 2.11 and for urban dropouts it was 2.13. The combined rural and urban overall grade-point average for dropouts was 2.12. It would be difficult to conclude that either rural or urban background had an appreciable effect on the determination of grade-point averages.

Grade-Point Averages of Disabled Students by Oklahoma and Out-of-State Residence

Oklahoma-origin disabled graduates and dropouts received lower grades than the school average in all categories (Table 47). The grades for out-of-state disabled graduate and dropout students were also lower than the school average in all categories except for the grade-point average of shop subjects for graduates. That the grades for Oklahoma-origin disabled graduates were lower than the school average is interesting in view of the fact that the monthly income of Oklahoma-origin disabled graduates was higher than the average income for all graduates (Table 36, Chapt. VI). The monthly income for out-of-state disabled graduates was lower than the average for all graduates. This same relationship also existed for grade-point averages, except for the grade-point average in shop subjects.

Oklahoma-origin disabled graduates had a 2.62 grade-point average in shop subjects. For the same category, out-of-state disabled graduates had a 2.84 grade-point average. The grade-point average in shop subjects was 2.79 for all graduates, both disabled and non-disabled. Disabled dropouts from Oklahoma had a 1.76 grade-point average in shop subjects. Out-of-state disabled dropouts had a 2.11 grade-point average for the same category. For all dropouts, disabled and non-disabled, the grade-point average was 2.17 for shop subjects.

In related subjects, Oklahoma-origin disabled graduates had a 2.46 grade-point average. For the same category,

TABLE 47

GRADE-POINT AVERAGES OF SUMMER 1966 OKLAHOMA STATE TECH DISABLED GRADUATES AND DROPOUTS BY OKLAHOMA AND OUT-OF-STATE RESIDENCE

Grade-point category	Student category	Residence of Disabled Students				All Summer 1966 Oklahoma State Tech graduates and dropouts:	
		Oklahoma		Out-of-State			
		Number of observations	Average	Number of observations	Average	Number of observations	Average
Shop subjects	Graduates	26	2.62	7	2.84	210	2.79
	Dropouts	24	1.76	7	2.11	171	2.17
Related subjects	Graduates	24	2.46	7	2.67	197	2.69
	Dropouts	24	1.07	6	1.72	130	1.75
Overall average	Graduates	26	2.58	7	2.70	210	2.76
	Dropouts	24	1.73	7	2.03	171	2.12

Source: Oklahoma State Tech Registrar's Office.

Rating System: 4.00 is excellent, 3.00 is good, 2.00 is fair, 1.00 is poor, and 0.00 is unsatisfactory.

out-of-state disabled graduates had a 2.67 grade-point average. The combined average for all graduates, disabled and non-disabled, was 2.69 for related subjects. Disabled dropouts from Oklahoma had a 1.07 gradepoint average in related subjects. Those from out-of-state had a grade-point average of 1.72. The grade-point average for all dropouts, disabled and non-disabled, was 1.75 for related subjects.

The overall grade-point average for disabled Oklahoma-origin graduates was 2.58, and for out-of-state disabled graduates it was 2.70. The overall grade-point average for all graduates, disabled and non-disabled, was 2.76. For disabled dropouts from Oklahoma, the overall grade-point average was 1.73 and for those from out-of-state, the overall grade-point average was 2.03. All dropouts combined, disabled and non-disabled, had an overall grade-point average of 2.12.

Graduates and Dropouts by Level of Education

Generally, the level of education of the graduates was higher than that of the dropouts (Table 48). The number of graduates who had 8 or less years of education was 12 or 5.7 per cent of the total. A higher percentage, 10.8 or 24 of the total, of dropouts had 8 or less years of education. Graduates having 9 to 11 years of education numbered 27 or 12.9 per cent. Dropouts for the same level of education numbered 55 or 24.7 per cent. There were 140 or 66.7 per cent of the graduates who had finished high school. One

hundred and twenty-five or 56.1 per cent of the dropouts had a high school diploma. The number of graduates who had some college education was 30 or 14.3 per cent, and the number of dropouts who had some college was 18 or 8.1 per cent. There was 1 graduate and 1 dropout who had completed college.

TABLE 48

LEVEL OF EDUCATION OF SUMMER 1966 OKLAHOMA STATE TECH GRADUATES AND DROPOUTS

Level of education (in number of years)	Graduates		Dropouts	
	Number	Per Cent	Number	Per Cent
0 to 8	12	5.7	24	10.8
9 to 11	27	12.9	55	24.7
12	140	66.7	125	56.1
13 to 15	30	14.3	18	8.1
16	1	0.5	1	0.4
Total	210	100.0	223	100.0

Source: Oklahoma State Tech Registrar's Office.

Totals may not add to 100.0 because of rounding.

Grade-Point Averages by Level of Education

For the graduates, there is some correlation between the level of education and the grade-point averages (Table 49). As the level of education goes up, the grade-point average is higher for all categories. The only exception to this was those who had completed college. However, there was only one graduate who had completed college, and so no valid generalizations can be made here. The same trend applies

TABLE 49

GRADE-POINT AVERAGES OF SUMMER 1966 OKLAHOMA STATE TECH GRADUATES AND DROPOUTS BY LEVEL OF EDUCATION

Level of education (in number of years)	Group											
	Graduates						Dropouts					
	Shop subjects		Related subjects		Overall average		Shop subjects		Related subjects		Overall average	
	Number of observations	Average	Number of observations	Average	Number of observations	Average	Number of observations	Average	Number of observations	Average	Number of observations	Average
0 to 8	5	2.38	4	2.15	5	2.28	15	2.19	10	1.03	15	2.18
9 to 11	27	2.68	25	2.59	27	2.64	41	2.20	23	1.59	41	2.15
12	147	2.83	136	2.70	147	2.77	99	2.13	83	1.86	99	2.07
13 to 15	30	2.94	28	2.81	30	2.90	15	2.37	13	1.79	15	2.30
16	1	2.80	1	2.60	1	2.70	1	2.40	1	3.00	1	2.50
Total or average	210	2.79	194	2.69	210	2.76	171	2.17	130	1.75	171	2.12

Source: Oklahoma State Tech Registrar's Office.

*Rating System: 4.00 is excellent, 3.00 is good, 2.00 is fair, 1.00 is poor, and 0.00 is unsatisfactory.

somewhat to the dropouts. However, the same step-by-step increase in grade-point averages does not exist with every level of more education.

The graduates with 8 or less years of education had a grade-point average of 2.38 in shop subjects. Those with 9 to 11 years of education had a grade-point average of 2.68. High school graduates had a grade-point average of 2.83. Those with some college had a grade-point average of 2.94. The sole college graduate had a grade-point average of 2.80. For the graduates, there is a steady increase in grade-point average for shop subjects with an increase in education except for the case with the one having completed a college education.

In the category of related subjects, the graduates with 8 or less years of schooling had a grade-point average of 2.15. It was 2.57 for those with 9 to 11 years of education. For high school graduates, it was 2.70. For those who had received some college education previously, it was 2.81. The single college graduate had a grade-point average of 2.60. With each increase in education, there is a higher grade-point average with the exception of the college graduate.

The overall average for graduates with 8 or less years of education was 2.28. Those with 9 to 11 years of education had a grade-point average of 2.64. High School graduates had a 2.77 grade-point average. Those who had some

college had a grade-point average of 2.90. The category of four years of college had a 2.70 average with one observation. There is a greater difference in the increase in the grade-point average between those with 8 grades or less and those with 9 to 11 years of education than between the other levels of education.

The dropouts with 8 or less years of education had a 2.19 grade-point average in shop subjects. For those with 9 to 11 years of education, the grade-point average was 2.20. High school graduates had a 2.13 grade-point average. Those dropouts with 13 to 15 years of education had a grade-point average of 2.31. The college graduate had a 2.40 grade-point average. With the exception of high school graduates, there was a corresponding increase in grade-point averages with an increase in education.

With related subjects, dropouts with 8 or less years of schooling had a grade-point average of 1.03. Those with some high school education had a grade-point average of 1.59. The grade-point average for high school graduates was 1.86. Those who had 1 to 3 years of college had a grade-point average of 1.79. The grade-point average of the college graduate category was 3.00. With the exception of those who had some college education, there is a steady increase in grade-point averages with greater amounts of education.

The overall grade-point average for dropouts with 8 or less years of education was 2.18. Those with some high

school education had a grade-point average of 2.15. High school graduates had a 2.07 grade-point average. Those having had some college education had a 2.30 grade-point average. The category of college graduate had a grade-point average of 2.50. The overall grade-point averages of dropouts do not increase correspondingly with increases in the level of education as was generally the case with the grade-point averages of the dropouts in shop and related subjects. The reason for this is that the overall grade-point averages are weighted, and because of this the same increase might not necessarily always result.

Graduates and Dropouts by Size of Senior Class

The following table (Table 50) breaks down the Fall 1962 first-time freshmen in the state system of higher education, Oklahoma-origin Fall 1962 first-time freshmen in the state system of higher education, 1962 graduates from Oklahoma high schools, and Summer 1966 Oklahoma-origin Oklahoma State Tech graduates and dropouts according to size of high school senior class.

The per cent of first-time freshmen in the state system of higher education in 1962 who came from high schools having fewer than 25 students in their senior class was 14.1. The per cent coming from high schools with 25 to 49 students in their senior class was 16.3, and 15.6 per cent came from high schools with 50 to 99 in the senior class. The largest

TABLE 50

DISTRIBUTION OF FALL 1962 FIRST-TIME FRESHMEN IN THE STATE SYSTEM OF HIGHER EDUCATION, OKLAHOMA-ORIGIN FALL 1962 FIRST-TIME FRESHMEN IN THE STATE SYSTEM OF HIGHER EDUCATION, 1962 GRADUATES FROM OKLAHOMA HIGH SCHOOLS, AND SUMMER 1966 OKLAHOMA-ORIGIN OKLAHOMA STATE TECH GRADUATES AND DROPOUTS ACCORDING TO SIZE OF HIGH SCHOOL SENIOR CLASS

Institution or Category	Number of Students in Senior Class									
	Fewer than 25		25 to 49		50 to 99		100 and over		Totals	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
OU	a	3.7	a	8.7	a	12.0	a	75.4	a	100.0
OSU		10.0		12.0		14.4		63.6		100.0
CSC		9.4		11.4		12.5		66.7		100.0
ECSC		23.0		29.1		18.5		29.4		100.0
NESC		8.7		17.5		19.2		54.6		100.0
NWSC		42.3		20.5		20.5		16.7		100.0
SESC		23.5		23.5		17.3		35.7		100.0
SWSC		34.6		25.8		19.9		19.7		100.0
OCW		15.8		15.1		21.1		48.0		100.0
PAMC		35.0		26.4		28.6		10.0		100.0
Langston		24.8		21.2		10.1		43.9		100.0
Cameron		13.2		22.6		8.7		55.5		100.0
Connors		33.7		21.1		23.5		21.7		100.0
Eastern		29.7		31.8		20.2		18.3		100.0
Murray		26.0		24.0		19.8		30.2		100.0
NEOAMC		9.0		24.8		18.6		47.6		100.0
NOJC		14.1		15.6		13.0		57.3		100.0
OMA		6.3		5.2		45.8		42.7		100.0

TABLE 50--Continued

Institution or Category	Fewer than 25		25 to 49		50 to 99		100 and over		Totals	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Total or average for fall 1962 first-time freshmen in the state system of higher education	a	14.1	a	16.3	a	15.6	a	54.0	a	100.0
Oklahoma-origin fall 1962 first-time freshmen in the state system of higher education	1,558	14.6	1,726	16.1	1,676	15.6	5,752	53.7	10,712	100.0
1962 graduates from Oklahoma high schools	4,747	17.5	4,738	17.5	4,081	15.1	13,476	49.8	27,052	100.0
Summer 1966 Oklahoma-origin Oklahoma State Tech graduates[b]	33	21.4	27	17.5	29	18.8	65	42.2	154	100.0
Summer 1966 Oklahoma-origin Oklahoma State Tech dropouts[b]	13	8.0	21	13.0	42	25.9	86	53.1	162	100.0

Source: For fall 1962 first-time freshmen in the state system of higher education, Oklahoma-origin fall 1962 first-time freshmen in the state system of higher education, and 1962 graduates from Oklahoma high schools from John T. Coffelt and Dan S. Hobbs, In and Out of College (Oklahoma City: Oklahoma State Regents for Higher Education), 1964, pp. 45-47, and for summer 1966 Oklahoma-origin Oklahoma State Tech graduates and dropouts from Oklahoma State Tech Registrar's Office.

[a]*Absolute amounts not available.*

[b]Oklahoma-origin graduates and dropouts include only those who graduated from high school.

*Totals may not add to 100.0 because of rounding.

per cent, 54.0, came from high schools which had senior classes of 100 or more.

The distribution of Oklahoma-origin 1962 first-time freshmen in the state system of higher education and all 1962 first-time freshmen in the state system of higher education by high school senior class size is similar. However, the distribution for 1962 graduates from Oklahoma high schools is somewhat different than the two above groups. More of the college students came from larger high schools.

With the Summer 1966 Oklahoma State Tech graduates, 21.4 per cent came from high schools having less than 25 students in their senior class. There were 17.5 per cent of the graduates in the 25 to 49 senior class category, 18.8 per cent in the 50 to 99 size category, and 42.2 per cent in the 100 and over group.

For the Summer 1966 Oklahoma State Tech dropouts, 8.0 per cent originated from high schools which had fewer than 25 in their senior classes. Thirteen per cent came from high schools having 25 to 49 in their senior classes. In the 50 to 99 size category, there were 25.9 per cent and 53.1 per cent in the 100 and over group.

On the basis of the percentage distribution of Oklahoma State Tech graduates, a pattern exists which indicates that relatively more of them are from smaller high schools than is the case with the state system of higher education in general. However, the same situation does not hold true for the dropouts.

The factors which might be responsible for the relative distribution of students into the various sizes of senior classes are many. The larger high school is generally more academically oriented than the smaller high schools. This might encourage more of their students to seek an academically oriented college education instead of one more oriented to vocational-technical education. Also, in the cities where the great majority of the large high schools are located, parental income is higher than in rural areas where the majority of the smaller high schools are located. Usually with higher parental incomes, it is more likely that the children will go to college.

Grade-Point Averages by Size of Senior Class

With the summer 1966 graduates of Oklahoma State Tech, there seems to be some correlation between the size of the senior class and the grade-point average (Table 51). Generally, the smaller the senior class, the higher the grade-point averages are. However, with the dropouts, somewhat the opposite situation prevails. The larger the senior class, the more likely the grade-point average will be higher.

The shop grade-point average for graduates coming from high school senior classes of less than 25 was 3.00. For those coming from the senior class size of 25 to 49, it was 2.92. The graduates from senior classes of 50 to 99 students had grade-point averages of 2.68, and those from senior classes with 100 or more students had a grade-point average

TABLE 51

GRADE-POINT AVERAGES OF SUMMER 1966 OKLAHOMA STATE TECH OKLAHOMA-ORIGIN GRADUATES AND DROPOUTS BY SIZE OF SENIOR CLASS

High school size (number of students in senior class)	Student category	Grade-point category: Shop subjects — Number of observations	Shop subjects — Average	Related subjects — Number of observations	Related subjects — Average	Overall average — Number of observations	Overall average — Average
Less than 25	Graduates	33	3.00	28	2.79	33	2.96
	Dropouts	9	1.82	8	1.88	9	1.84
25-49	Graduates	27	2.92	25	2.76	27	2.89
	Dropouts	15	2.12	11	1.69	15	2.07
50-99	Graduates	29	2.68	27	2.47	29	2.61
	Dropouts	33	2.14	26	1.67	33	2.00
100 or more	Graduates	65	2.69	63	2.65	65	2.66
	Dropouts	69	2.20	50	1.79	69	2.18
Total or average for graduates of Oklahoma high schools	Graduates	154	2.79	143	2.64	154	2.76
	Dropouts	126	2.15	95	1.75	126	2.11

Source: Oklahoma State Tech Registrar's Office and size of senior class of each graduate or dropout's high school from records of the Statistics and Accounting Division, State Department of Education, Oklahoma City.

*The size of the senior class of 1965-1966 of each graduate or dropout's high school was used. The Division of Statistics and Accounting indicated that the size of most high school senior classes in Oklahoma had varied little in recent years.

**Rating System: 4.00 is excellent, 3.00 is good, 2.00 is fair, 1.00 is poor, and 0.00 is unsatisfactory.

of 2.69. For the dropouts, the shop grade-point average was 1.82 for those coming from high schools with senior classes of less than 25. Those coming from senior classes of 25 to 49 students had a grade-point average of 2.12. The 50 to 99 senior class size had students with a grade-point average of 2.14 and the 100 or more senior class size had students with a grade-point average of 2.20.

The grade-point average in related subjects for the graduates who had been in high schools with senior classes of less than 25 was 2.79. For those who had been in senior classes of 25 to 49 students, the grade-point average was 2.76. The senior classes of 50 to 99 size had students with a grade-point average of 2.47. Those in senior classes of 100 or more had a grade-point average of 2.65. Dropouts who had been in senior classes of 25 or less had a grade-point average of 1.88 in related subjects. The grade-point average for those who were in senior classes of 25 to 49 was 1.69. It was 1.67 for those who came from senior classes of 50 to 99 students, and it was 1.79 for those who came from senior classes of 100 or more students.

The overall grade-point average for graduates who came from high schools with less than 25 students was 2.96. For those who came from high schools with 25 to 49 senior students, the grade-point average was 2.89. The grade-point average for those who were in high schools with 50 to 99 students in the senior class was 2.61. It was 2.66 for

those who were in senior classes of 100 or more students. Dropouts who came from high schools with less than 25 in the senior class had a 1.84 overall-grade-point average. It was 2.07 for those who came from high schools with 25 to 49 in the senior class. The grade-point average was 2.00 for those who were in high school senior classes of 50 to 99, and for those who came from high schools with 100 or more students in the senior class it was 2.18.

Grade-Point Averages by High School Activities

There is some concern today about the pre-vocational value of high school activities and their effect on scholastic achievement of students in post-high school vocational and technical curriculums. Recent studies indicate that academic courses, particularly the physical sciences, were apparently just as effective as high industrial arts courses, distributive occupation courses, distributive education courses, and other associated educational activities in preparing students for later vocation-technical education courses.[1]

Apparently, only three activities or combinations of activities had any appreciable effect on the various grade-point averages of the summer 1966 Oklahoma State Tech graduates (Table 52). They were Distributive Education, 4-H, and

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[1]Jerome Moss, Jr., The Influence of Industrial Arts Experience on Grades in Post-High School Trade and Technical Curriculum (Minneapolis: Minnesota Research Coordination Unit in Occupational Education, 1966), pp. 23-24.

TABLE 52

GRADE-POINT AVERAGES OF SUMMER 1966 OKLAHOMA STATE TECH GRADUATES AND DROPOUTS BY HIGH SCHOOL ACTIVITIES

High School Activities	Group											
	Graduates						Dropouts					
	Shop subjects		Related subjects		Overall Average		Shop subjects		Related subjects		Overall average	
	Number of observations	Average	Number of observations	Average	Number of observations	Average	Number of observations	Average	Number of observations	Average	Number of observations	Average
DO*	8	2.71	8	2.70	8	2.71	2	1.20	2	1.45	2	1.25
DE	5	3.28	5	3.28	5	3.28	1	2.50	1	2.30	1	2.40
T and I	16	2.63	16	2.45	16	2.56	16	2.20	9	2.18	16	2.19
FFA	41	2.80	40	2.58	41	2.75	21	2.02	19	1.73	21	2.03
4-H	10	2.98	10	2.71	10	2.92	14	1.72	13	1.21	14	1.60
FFA and 4-H	9	3.10	9	2.96	9	3.07	12	2.30	8	1.69	12	2.29
FFA and T & I	3	2.73	3	2.80	3	2.67	1	2.40	--	--	1	2.40
No high school activities	118	2.78	103	2.73	118	2.76	104	2.25	78	1.82	104	2.18
Total or average	210	2.79	194	2.69	210	2.76	171	2.17	130	1.75	171	2.12

Source: Oklahoma State Tech Registrar's Office.

*DO is business and office education, DE is distributive education, T and I is trade and industrial education. FFA is Future Farmers of America, and 4-H is for 4-H clubs.

FFA and 4-H together. The others seem to have had either no effect or a negative effect on the grade-point averages. Interestingly, the grade-point averages of those graduates who had no such activities were about the same as the grade-point averages for all students.

Only two activities had any positive effect on the grade-point averages of the summer 1966 Oklahoma State Tech dropouts. They were Trade and Industrial education and the combination of FFA and 4-H. The other activities either had no effect or a negative effect on the various grade-point averages. Surprisingly, those with no such high school activities had higher grade-point averages than the average grade-point average for all dropouts.

The only high school activity or combination of activities which had a positive effect on the grade-point average of both the graduates and the dropouts was the combination of FFA and 4-H. The one activity which would have been thought to have produced a positive effect on grade-point averages was Trade and Industrial education. However, there was a negative relationship between it and grade-point averages for the graduates, and for the dropouts it had only a slightly positive effect. In several cases, however, there is an insufficient number of observations to make any conclusions from them. The fact that those who had no such high school activities either fared as well or better on grade-point averages than the average for the two

groups is indicative that the value of high school activities is of doubtful importance in effecting post-high school vocational-technical scholastic achievement.

Grade-Point Averages by Location of Employment

In all grade-point average categories, the graduates who took jobs in Oklahoma had higher grade-point averages than those who took out-of-state employment (Table 53). The grade-point average of those graduates who accepted employment in Oklahoma was 2.87 in shop subjects. For those who took employment outside of Oklahoma, it was 2.78. The grade-point average for all employed respondents in shop subjects was 2.84. For all graduates, the grade-point average for shop subjects was 2.79 (Table 44). In related subjects, the Oklahoma-employed graduates had a 2.74 grade-point average, and those employed out-of-state had a 2.71 grade-point average. The grade-point average for all employed respondents was 2.73. The grade-point average for all graduates was 2.69 in related subjects. The overall grade-point average for those graduates employed in Oklahoma was 2.84. For those employed outside of Oklahoma, it was 2.74. The overall grade-point averages for all employed respondents were 2.80. For all graduates, the overall grade-point average was 2.76.

TABLE 53

GRADE-POINT AVERAGES OF SUMMER 1966 OKLAHOMA STATE TECH GRADUATES BY LOCATION OF EMPLOYMENT

Location of Employment	Grade-Point Category					
	Shop subjects		Related subjects		Overall average	
	Number of observations	Average	Number of observations	Average	Number of observations	Average
Oklahoma	71	2.87	66	2.74	71	2.84
Out-of-state	42	2.78	40	2.71	42	2.74
Average or total for employed respondents	113	2.84	106	2.73	113	2.80

Source: Oklahoma State Tech Registrar's Office and post-graduation questionnaire given to Summer 1966 Oklahoma State Tech graduates.

*Rating System: 4.00 is excellent, 3.00 is good, 2.00 is fair, 1.00 is poor, and 0.00 is unsatisfactory.

Grade-Point Averages by Change in Employment Status

Graduates who had changed jobs from the one they had immediately after graduation had lower grade-point averages in all categories than those who were still with their same employers six months after graduation (Table 54). In shop subjects, the grade-point average was 2.85 for those who were still with the same employer six months after graduation. It was 2.79 for those who had changed jobs from their original employment. The grade-point average in shop subjects was 2.84 for all employed respondents. In the area of related subjects, those who were still with their original employers had a grade-point average of 2.78. Those who were no longer with their original employers had a grade-point average of 2.51. The grade-point average for all employed respondents was 2.74. The overall grade-point average for those who were still at their original employment was 2.83. For those who had changed jobs from their original employment, the grade-point average was 2.68. The overall grade-point average for all employed respondent graduates was 2.80.

Educational Attainment of Parents of Graduates

The educational attainment of parents has an effect on whether or not their children will seek higher education. The usual effect is that parents with a college background are more likely to send their children to college than those without such education.

TABLE 54

GRADE-POINT AVERAGES OF SUMMER 1966 OKLAHOMA STATE TECH GRADUATES BY WHETHER OR NOT THEIR EMPLOYMENT SIX MONTHS AFTER GRADUATION WAS WITH THE SAME FIRM THAT THEY STARTED WITH AFTER GRADUATION

Grade-point category	With same firm six months after graduation		Not with same firm six months after graduation		Total number of observations	Combined average
	Number of observations	Average	Number of observations	Average		
Shop subjects	90	2.85	23	2.79	113	2.84
Related subjects	85	2.78	21	2.51	106	2.74
Overall average	90	2.83	23	2.68	113	2.80

Source: Oklahoma State Tech Registrar's Office and post-graduation questionnaire given to Summer 1966 Oklahoma State Tech graduates.

*Rating System: 4.00 is excellent, 3.00 is good, 1.00 is poor, and 0.00 is unsatisfactory.

Of the parents of the graduates, 48.7 per cent of the fathers and 31.0 per cent of the mothers had 8 or less years of education. The per cent for all Oklahomans over 25 years of age who had 8 or less years of education was 41.3. The category of 9 to 11 years of education had 13.4 per cent of the fathers and 19.3 per cent of the mothers. This category had 18.2 per cent of the Oklahoma population above 25 years of age. High school graduates composed 27.8 per cent of the fathers and 39.6 per cent of the mothers of the graduates. The per cent of Oklahomans over 25 years of age who had graduated from high school was 22.9. The per cent of graduates' fathers who had 13 to 15 years of education was 5.3 and it was 4.8 for the mothers of the graduates. In the Oklahoma population over 25 years of age, 9.7 per cent had 13 to 15 years of education. Only 4.8 per cent of the graduates' fathers and 5.3 per cent of the graduates' mothers had 16 or more years of education. The Oklahoma population over 25 years of age had 7.9 per cent who had 16 or more years of education (Table 55).

Less of the graduates' parents had either some college education or a college degree than the Oklahoma population over 25 years of age. The fact that these graduates' parents had less college training than their counterparts in the state system of higher education is demonstrated by Table 56. Only 1.6 per cent of Oklahoma State Tech's graduates had parents with both being a college graduate. The

TABLE 55

EDUCATIONAL ATTAINMENT OF PARENTS OF SUMMER 1966 OKLAHOMA STATE TECH GRADUATES AND 1960 OKLAHOMA POPULATION OVER 25 YEARS OF AGE

Level of education (in number of years)	Graduates[a]				1960 Oklahoma population over 25 years of age	
	Father		Mother			
	Number	Per Cent	Number	Per Cent	Number	Per Cent
8 or less	91	48.7	58	31.0	536,279	41.3
9 to 11	25	13.4	36	19.3	237,031	18.2
12	52	27.8	74	39.6	298,197	22.9
13 to 15	10	5.3	9	4.8	125,218	9.7
16 or more	9	4.8	10	5.3	102,117	7.9
Total	187	100.0	187	100.0	1,299,842	100.0

Source: For graduates from pre-graduation questionnaire given to Summer 1966 Oklahoma State Tech graduates and for 1960 Oklahoma population over 25 years of age from Bureau of Census, U.S. Department of Commerce, 1960 Census of Population, Vol. I, Characteristics of the population, Oklahoma, Pt. 38, Table 47.

[a]Excludes 23 students who did not respond to the pre-graduation questionnaire.

TABLE 56

COLLEGE EDUCATIONAL ATTAINMENT OF PARENTS OF FALL 1962 FIRST-TIME FRESHMEN IN THE STATE SYSTEM OF HIGHER EDUCATION AND SUMMER 1966 OKLAHOMA STATE TECH GRADUATES

Institution or category	Parental Education: Both parents college graduates		One parent college graduate		Neither parent college graduate		Totals	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
OU	320	14.5	597	27.1	1,285	58.4	2,202	100.0
OSU	268	11.0	548	22.5	1,622	66.5	2,438	100.0
CSC	40	3.8	119	11.4	886	84.8	1.045	100.0
ECSC	15	4.0	40	10.7	320	85.3	375	100.0
NESC	30	4.4	103	15.1	550	80.5	683	100.0
NWSC	15	4.4	44	13.1	278	82.5	337	100.0
SESC	13	4.2	33	10.7	263	85.1	309	100.0
SWSC	25	4.2	69	11.7	498	84.1	592	100.0
OCW	10	6.6	23	15.1	119	78.3	152	100.0
PAMC	9	4.1	24	10.9	187	85.0	220	100.0
LU	8	4.0	12	6.1	178	89.9	198	100.0
Cameron	22	4.0	74	13.3	458	82.7	554	100.0
Connors	4	2.5	16	9.8	143	87.7	163	100.0
Eastern	7	2.2	31	9.6	283	88.2	321	100.0
Murray	4	2.1	12	6.2	178	91.7	194	100.0
NEOAMC	15	2.8	71	13.1	455	84.1	541	100.0
NOJC	8	3.0	35	13.3	221	83.7	264	100.0
OMA	8	8.6	18	19.4	67	67.3	93	100.0
Total or average	821	7.7	1.869	17.5	7,991	74.8	10,681	100.0
Summer 1966 Oklahoma State Tech Graduates	3	1.6	16	8.6	168	89.8	187[a]	100.0

Source: For fall 1964 first-time freshmen in the state system of higher education. John T. Coffelt and Dan S. Hobbs, In and Out of College (Oklahoma City: Oklahoma State Regents for Higher Education), 1964, p. 48 and pre-graduation questionnaire given to summer 1966 Oklahoma State Tech graduates.

[a]Excludes 23 students who did not respond to the pre-graduation questionnaire.

*Totals may not add to 100.0 because of rounding.

average for the state system of higher education students who had parents with both having a college degree was 7.7 per cent. The per cent of graduates who had one parent with a college degree was 8.6 per cent, and for the state system of higher education, the same category had 17.5 per cent. Neither parents having a college degree made up 89.8 per cent of the graduates' parents and for the students of the state system of higher education, 74.8 per cent of the parents had no college education.

Students whose parents had the greatest amount of formal education were more inclined to attend a university than other types of institutions, while those students whose parents had the least amount of formal education tended to gravitate towards Oklahoma State Tech and the junior colleges. There seems to be some effect of parental education, not only on whether or not children seek higher education, but also on what type of institution and curriculum they choose to endeavor.

Personal Characteristics of Graduates and Dropouts

Instructors rate each Oklahoma State Tech student every tri-semester on various personal characteristics. These ratings for each tri-semester are averaged together to obtain an overall rating on each student in the various different personal traits. An average of each personal trait for the graduates and the dropouts is contained in Table 57.

TABLE 57

INSTRUCTORS' RATING OF PERSONAL CHARACTERISTICS OF SUMMER 1966 OKLAHOMA STATE TECH GRADUATES AND DROPOUTS

Personal Characteristic	Graduates		Dropouts		Differential between ratings
	Number of observations	Rating	Number of observations	Rating	
Personality	210	2.69	180	2.43	0.26
Aptitude	210	2.53	180	2.14	0.39
Initiative	210	2.53	180	2.12	0.41
Dependability	210	2.73	180	2.24	0.49
Judgment	210	2.58	180	2.28	0.30
Attitude	210	2.77	180	2.32	0.45
Cooperativeness	210	2.86	180	2.78	0.08
Quantity of work	210	2.52	180	2.04	0.48

Source: Oklahoma State Tech Registrar's Office.

*Rating System: 4.00 is excellent, 3.00 is good, 2.00 is fair, 1.00 is poor, and 0.00 is unsatisfactory.

The graduates had a higher average in all personal characteristics than the dropouts had. There are four traits where the differential between the graduate and dropout ratings was greater than 0.40. They are initiative, dependability, attitude, and quantity of work. There was a differential of 0.30 or greater with two characteristics. They are aptitude and judgment. One characteristic, personality, had a differential of 0.20 or greater. The trait of cooperation had a differential of less than 0.10.

The graduates had an average of 2.69 for personality. It was 2.43 for the dropouts. The graduates had a ranking of 2.63 and the dropouts 2.14 for aptitude. Initiative had a ranking of 2.53 for the graduates and 2.12 for the dropouts. The graduates were given ranking of 2.58 for judgment while the dropouts had a 2.28 ranking here. Attitude was ranked 2.77 for the graduates and 2.32 for the dropouts. Cooperativeness had the highest ranking for both the graduates and dropouts of all personal characteristics. It was 2.86 for the graduates and 2.78 for the dropouts. Quantity of work had the lowest ranking for both the graduates and the dropouts. It was 2.52 for the graduates and 2.04 for the dropouts.

Five personal characteristics seem to differentiate the graduates from the dropouts. They are aptitude, initiative, dependability, attitude, and quantity of work. There was little difference between the graduates and dropouts on

cooperativeness. More should be done to try to improve, not only the quality of the students immediate work skills, but also his personal characteristics. The quality of the personal traits effect the student's performance, not only in his educational pursuits, but also on the job.

CHAPTER VIII

SUMMARY AND CONCLUSIONS

The Economic and Social Significance of Education

In the past, the American educational system has not attempted to equip a large number of students with specific occupational skills. The educational training has been geared to preparing students for college. For those two out of three youths who do not attend college, and the many others who do not finish college, there has been an education and training void. There should be as much concern about assisting them in their transition from school to work as there is about preparing others for college. We have not yet established a satisfactory way to bridge the gap between school and work.

The labor market is far more complex today and is increasingly demanding higher levels of skill attainment for entry into an occupation. Because of this, vocational and technical education is taking on great significance. Recently, there has developed a growing awareness that the absence of suitable vocational and technical education is a major cause of youth unemployment and skill shortages in our economy.

The development of a comprehensive vocational and technical education and training system is a requisite in an attempt to solve these problems. How to provide such a system as an integral component of our total educational apparatus constitutes one of the major challenges in education today. The inadequacies of existing programs of vocational-technical education and training can be attributed fundamentally to limited choices of programs available to students or the failure to adapt the programs to meet changing needs of the economy and society.

It is possible to demonstrate without difficulty the social and economic importance of education. Such benefits accrue to both the individual himself and society as a whole.

In the past the emphasis in work has been on manipulative skills. However, this emphasis has shifted to the cognitive skills through the "new technology." The number of white-collar workers was less than half the number of blue-collar workers in 1900. By 1960, the number of white-collar workers had more than equaled blue-collar workers, and by 1975, it is projected that the number of white-collar workers will be 43 per cent greater than the number of blue-collar workers.

The occupations which will become relatively more important in the future are those demanding higher levels of skill development and education. More and more occupations are increasingly requiring specialized skills and knowledge

for which there must be prior training and education. Our technologically orientated society has little to offer the untrained, under-educated worker.

The importance of education can also be demonstrated by the unemployment rates of people having varying amounts of education. The unemployment rates go down steadily as the number of years of schooling completed increases. In recent years, the unemployment rate of those workers with 12 or less years of education has increased while the unemployment rate of those with more than 12 years of education has lessened.

Numerous studies have been conducted which show that persons with more education tend to earn more income. More schooling, especially at the secondary and post-secondary levels, does improve the productivity of the worker, thereby compensating him for his investment in education, the opportunity costs, and the effort expended on his educational pursuits. In 1966, the median income for those who had completed elementary school was $4,210, for those who had completed high school it was $6,458, and for those who had completed college it was $8,748.

Other studies have shown the importance of education to the total economy. Schultz estimates that between 36 per cent and 70 per cent of the rise in real income between 1929 and 1956 can not be explained by an increase in the stock of tangible capital. He feels that this unexplained increase can possibly be considered as a return on the investment in

additional education and training made in the labor force.

There are other benefits from education besides increased income. They are of a social and cultural nature. In fact, many of the social and cultural results and benefits associated with more education and training may well be worth their cost in time, money, and effort expended even if the economic yields should cease to exist. However, many fruits of education and training are distributed so broadly that the nature of specific beneficiaries is obscure and not easily ascertainable. But because these social and cultural benefits are less pervasive through quantification does not mean though that they are less important.

Many of the social and psychological effects of education are subtle in nature. For example, with the shift in the forces of industrialization and technology, the concept of "work" and man's "relationship" to it has changed. Machines have replaced men in the so-called "hard work." Hard work today means mostly boring and repetitive work whether in the factory or in the office. The various human characteristics, the instinct for workmanship, the need to feel needed, and the will to achieve, are not universally fulfilled by the type of work many people do. And so today, we have substituted the "job" in place of "work" in many cases. Other than the job, the individual has few other statuses which are capable of offering him a respected position in society. Therefore, the job itself and the education and training

which bring it about are currently of crucial importance.

Modern society has social, cultural, political, and economic objectives. The development of human resources is necessary to achieve all of these. There does not need to be in reality any conflict between the various objectives. However, the development of man for himself should still be considered the ultimate end of the educational process.

Human capital development systems can be instituted to increase economic well-being while at the same time enhancing the development of the individual and society. Education and training must, therefore, be tailored to our present and projected objectives of society. Secondary and post-secondary education systems, be they vocational, technical, or academic, need to be scrutinized so that every individual will benefit from them, not just a few.

Federal Vocational-Technical Education Legislation

There are six principal pieces of federal legislation which have assisted secondary and post-secondary vocational-technical education. They are the Smith-Hughes Act, the George-Reed Act, the George-Ellzey Act, the George-Deen Act, the George-Barden Act, and the Vocational Education Act of 1963. Because of the nature of occupational demands, the first five are concerned primarily with "vocational" education and the last, the Vocational Education Act of 1963, is concerned more with "technical" education.

The Commission on National Aid to Vocational Education of 1914 was the Magna Charta of vocational education. It set up certain objectives and guidelines for vocational education programs. As a result of its work, the Smith-Hughes Act of 1917 was passed. Settling guidelines for future legislation, this law provided for cooperative assistance between the federal government and the states in setting up and administering vocational education programs. However, with this arrangement, the states were to take the initiative in establishing and administering the vocational education programs which were to be set up. Each state was required to prepare a "state plan." This plan was to include present and future vocational education programs and objectives.

The Vocational Education Act of 1917, the Smith-Hughes Act, was the result of the desire for more federal-state cooperation in supporting education. Many of the earlier acts supporting general education imposed few conditions on the expenditures of federal monies. However, the Smith-Hughes Act was very specific and exacting in the use of federal funds for vocational education. It was felt that these federal controls would preserve the integrity of the various vocational education programs from interference from hostile general education supporters in the states and local communities.

In 1929, Congress passed the George-Reed Act to provide for additional vocational education funds over a period

of five years. The increased aid was specifically designated for agricultural and home economics education. The general provisions of this act were similar in nature to those of the Smith-Hughes Act. However, the grants here were made for a specific period of time indicating that Congress had taken a different view on granting funds in perpetuity. It was felt that because of changing demands of education, circumstances would warrant periodic review and change in vocational education legislation.

To insure the continued support of vocational education programs, the George-Ellzey Act was passed in 1934 to provide funds for three additional years. Most of the particulars of this act concerning the administration and organization of the vocational education programs were similar in nature to that of the previous Smith-Hughes and George-Reed Acts.

The George-Deen Act was passed in 1937. This act differed from preceding acts in that a new area of vocational education was to be supported. It was distributive education. Additional flexibility was also allowed under this law in the various programs. However, most of the same controls and limitations of previous laws were embodied in this law.

The George-Barden Act of 1946 increased the amount of annual appropriations for vocational education. Under the provisions of this law, flexibility was increased again in the operations of the state vocational education programs.

This law also set up certain new vocational education programs.

The Vocational Education Act of 1963 was passed in response to a wide-felt need for improved vocational and technical education. It was the first major overhaul of the vocational education system since the passage of the George-Barden Act of 1946, and the most important in the legislative history of vocational education since the passage of the Smith-Hughes Act in 1917. The underlying philosophy of this act is that all people should have access to appropriate high quality education and training.

New funds were not only added for various new educational programs, but also for research and demonstration projects. The "area" vocational school concept was initiated by this Act, and through this new approach to occupational training, the role of technical education was enhanced. This law required vocational and technical education programs to be geared to changing manpower requirements.

The Manpower Development and Training Act and the old Area Development Act programs have provided vocational education of a short-term nature. These laws were designed primarily though to assist the unemployed and the underemployed. Programs under these laws have been directed primarily toward solving immediate occupational problems as opposed to being permanent education and training programs. What they have been able to do and what they have not been

able to do has pointed out the critical need for greater vocational and technical education orientation within our educational system, both secondary and post-secondary.

Vocational-Technical Education in Oklahoma

Most of the institutions in the Oklahoma state system of higher education offer some vocational or technical education programs. However, the junior colleges have the majority of these programs. There are three "schools" in Oklahoma which are designed primarily for vocational and technical education. These three schools are under the auspices of Oklahoma State University. They are Oklahoma State Tech at Okmulgee and two technical branches at Stillwater and Oklahoma City.

Of the 71,982 students in the Oklahoma state system of higher education during the fall semester of 1966, 6.1 per cent were vocational or technical education students. The Oklahoma State Regents for Higher Education have jurisdiction over all post-secondary state-supported institutions. However, the Division of Vocational Education of the state Department of Education also provides financial and other assistance to these schools in support of their vocational and technical education programs.

Oklahoma State Tech

The school used as the basis of this study was Oklahoma State Tech at Okmulgee. Over 2,000 students are

currently enrolled in over 40 different areas of specialization. It is unique in that anyone over 17 and one-half years of age can attend. A high school diploma is not required for admittance. The school is designed to "bridge the gap between the semi-skilled crafts and the highly scientific professions."

The two principal sources of income for Oklahoma State Tech during the fiscal year, 1965-1966 were student fees and state appropriations. Student fees made up 35.9 per cent of the total income of Oklahoma State Tech. For all institutions in the state system of higher education, student fees averaged 23.5 per cent of total income. No other institution received a higher percentage of its income from student fees than Oklahoma State Tech. The student at Oklahoma State Tech is paying a much higher per cent of the total costs of his education than are his counterparts at other Oklahoma state institutions of higher education. State appropriations provided 51.3 per cent of Oklahoma State Tech's income. For all state institutions, state appropriations accounted for 61.1 per cent of the total income. Comparing the two-year colleges with Oklahoma State Tech, there is an even greater difference in the source of funds on a percentage basis. Student fees at the two-year colleges averaged about one-half the per cent of Oklahoma State Tech's student fees as a part of total income. To offset this smaller per cent, state appropriations to the two-year colleges

averaged about 20 per cent higher than Oklahoma State Tech's state appropriations.

On a per-full-time equivalent basis, about the same amount, $799.00, was received on each Oklahoma State Tech student versus the average amount, $807.00, received on students in all institutions in the state system of higher education. Oklahoma State Tech students paid an average of $287.00 in fees. This was about $100.00 more than the all-institution average for student fees. The average state appropriation per full-time-equivalent student was $493.00 for all institutions. Oklahoma State Tech received only $410.00 per full-time-equivalent student from state appropriations. It is apparent that in comparison to other Oklahoma state institutions, the students at Oklahoma State Tech are paying a greater share of their education.

Oklahoma State Tech spent 12 per cent of the budget on general administration and expenses. This was within John Dale Russell's guideline of 15 per cent for this category and about the same as the all-institution average of 11.9 per cent. For instruction, Oklahoma State Tech spent 71.1 per cent of its budget. This is above Russell's recommendation of 60 per cent for instruction and also above the all-institution average of 59.9 per cent. Because of the nature of this school, Oklahoma State Tech spent little on extension and research and libraries. Physical plant operation and maintenance required 15.2 per cent of Oklahoma State Tech's

overall budget. The average for all institutions was 12.1 per cent. Even though Oklahoma State Tech's percentage is larger than the all-institution average, it is still under Russell's recommendation of 16 per cent of this expenditure.

On a per full-time-equivalent basis, Oklahoma State Tech spent $759.00 which was less than the all-institution average of $774.00. Of this $759.00, Oklahoma State Tech spent $90.00 on general administration and expenses. The average for all institutions was $92.00. On instructional and organized activities, Oklahoma State Tech spent $539.00. All institutions together averaged $462.00 on this item. Oklahoma State Tech spent $13.00 on research and extension and public services. Other institutions averaged $125.00 on these combined activities. Physical plant required $115.00 at Oklahoma State Tech, and for all other institutions it averaged $94.00.

One of the most striking differences between the vocational and technical schools and the academically orientated institutions is the ratio of men to women. Men accounted for 92.1 per cent of the fall 1966 enrollment at Oklahoma State Tech. For all state institutions of higher education, 63.2 per cent were men. However, most of the programs of instruction at Oklahoma State Tech are orientated towards males and, therefore, a low female enrollment would be expected.

Oklahoma State Tech had 87.5 per cent of its students

from Oklahoma, 12.1 per cent from out-of-state, and 0.4 per cent from foreign countries. The corresponding percentages for all institutions in the state system of higher education were 85.5 per cent in-state, 12.7 per cent out-of-state, and 1.8 per cent foreign. Oklahoma State Tech attracts many out-of-state students because its programs are approved by various federal agencies.

A geographic analysis of Oklahoma-origin Oklahoma State Tech students was made. It was found that the statewide representation was as equitable as could be expected and probably more equitable than most other institutions in the state system of higher education. From the observations made, it was concluded that Oklahoma State Tech was not serving to any great degree as an "area" school.

Socio-Economic Characteristics of Oklahoma State Tech Students

Two hundred and ten graduates and 223 dropouts of Oklahoma State Tech were used as the basis of this study. Of the graduates, 187 filled out a questionnaire given to them before graduation. A total of 153 filled out a follow-up questionnaire. This is 72 per cent of the total number of graduates and 82 per cent of those who completed the first questionnaire. Information was also collected on the graduates from the Registrar's Office at Oklahoma State Tech. For the dropouts, the sole source of information was their student file from the Registrar's Office.

Of the graduates considered in this study, 86.7 per cent were male. Of the dropouts, 89.2 per cent were male. In the fall of 1966, 63.2 per cent of the students in all institutions in the state system of higher education were males. It is obvious that women are not as fully educated as men at Oklahoma State Tech.

Another striking difference between Oklahoma State Tech students and students in other Oklahoma institutions of higher education is the higher number of Indians and Negroes enrolled at Oklahoma State Tech. Of the graduates, 11.0 per cent were Indians, 7.1 per cent were Negroes, and 80.5 per cent were white. For the dropouts, about the same distribution exists. Nine and four-tenths were Indian, 9.9 per cent were Negro, and 80.3 per cent were white. Oklahoma population in 1966 was 2.8 per cent Indian, 6.6 per cent Negro, and 90.5 white. In 1962, it was found that 1.6 per cent of the students in the state system were Indian, 3.5 per cent were Negro, and 94.6 per cent were white.

The mean age at matriculation of the graduates was 22.67 years and 23.5 years for the dropouts. The median age at matriculation of the graduates was 22 years and for the dropouts, it was 21 years. All of these figures are higher than those compiled by Ross Henninger in a national study of vocational and technical education students. He found that the average age at matriculation was 20 years with the median being 19 years. This upward biasness of the Oklahoma

State figures is probably due to the fact that a high school diploma is not required for entrance, and this allows many older people to go back to school.

Considerably more students at Oklahoma State Tech were married than at other institutions in the Oklahoma state system of higher education. Only 51.9 per cent of the graduates and 57.3 per cent of the dropouts were single. With the fall 1962 first-time freshmen in the state system of higher education, 92.4 per cent were single. The higher incidence of married students at Oklahoma State Tech is probably due to the higher age level of their students rather than any other factor. Most students in academic institutions go directly to college, while at Oklahoma State Tech many students do not attend school immediately after their high school graduation.

The per cent of graduates and dropouts who were from Oklahoma was 87.1 per cent and 85.7 per cent, respectively. Eighty-five and one-half per cent of the students in the state system of higher education were from Oklahoma. Even though the orientation of this institution is very different from the other state institutions, it is still drawing about the same percentage from outside of Oklahoma.

Of the graduates and dropouts, 37.6 per cent and 38.1 per cent, respectively, were from rural areas. In 1960, the population of Oklahoma was 37.1 per cent rural. These percentages compare favorably with each other, and there

does not seem to be any significant difference between them to indicate that people from one type of background are any more likely to graduate or drop out from school than people from another type of background.

Occupational status, income, and education are all interrelated. Such factors in turn affect the social and cultural values placed on the need and importance of education. With both graduates and dropouts, there were relatively fewer parents with white-collar jobs and relatively more with blue-collar jobs than in Oklahoma and the national labor force.

As might be expected, the parental income of Oklahoma State Tech students was considerably lower than the parental income of students from the other state institutions of higher education. About 60 per cent of the graduates' parents had below $5,000 in income, 26 per cent had between $5,000 and $9,999 in income, and 14 per cent had over $10,000 in income. For the parents of the 1962 first-time freshmen in the Oklahoma state system of higher education, 31 per cent of the families had below $5,000 in income, 51 per cent were in the $5,000 to $9,999 category, and 18 per cent had more than $10,000 in income. In 1960, 54 per cent of Oklahoma families had less than $5,000 in income, 36 per cent had between $5,000 and $9,999, and 10 per cent had income above $10,000. If income bore no relationship to education, slightly more than one-half of the students in Oklahoma

state higher education institutions should have come from families earning less than $5,000. However, about 30 per cent of the first-time freshmen in all Oklahoma state colleges and universities came from that group and about 60 per cent of the Oklahoma State Tech graduates came from that group.

Of the 180 responses to the pre-graduation questionnaire on job prospects, 91 or 50.6 per cent reported that they had found employment which was to commence immediately upon graduation. A higher per cent of men had jobs than women.

On the same questionnaire, there were 83 responses by the graduates who did not have jobs waiting for them. Sixty-three per cent of this group said they would find a job in Oklahoma. Fifty-eight per cent said they would prefer to stay in Oklahoma. However, 66 per cent indicated that their chances for employment were better outside of Oklahoma than they were in Oklahoma.

One hundred and fifty-three graduates replied to the follow-up questionnaire. Of these respondents, 113 or 74 per cent had jobs. Of the 40 who said that they were not gainfully employed, 21 men were in the military, 4 men and 3 women were furthering their education, and 1 was a housewife. This left 11 or 7.2 per cent who were actually unemployed.

There seems to be no relationship between geographic

origin and the ability of a student to obtain a job. However, of the 113 positions filled by these graduates, 42 or 37 per cent were out-of-state, and 71 or 63 per cent were in Oklahoma. This compares unfavorably with the geographic origin of the graduates. Of the graduates, 87.1 per cent came from Oklahoma and 12.9 per cent were from out-of-state. No appreciable evidence was found to indicate that rural or urban background had any effect on whether a graduate sought in-state or out-of-state employment.

For the graduates who had jobs at graduation, 51.1 per cent were found through the school. Other important methods were the state employment service providing 15.2 per cent of the jobs, friends and relatives providing 13.0 per cent, and applying directly accounting for 12.0 per cent of the jobs. Of the graduates who did not have jobs at graduation, 46.3 per cent indicated that the school would be of most assistance in finding a job. The state employment service was second with 35.4 per cent of the respondents. Eleven per cent said that relatives or friends would be the most important. Only 3.7 per cent said that applying directly was the most important method. It is noteworthy that the graduates who did not have jobs at graduation still considered the school to be the most important source of getting a job.

About one-fifth of the graduates had changed jobs from the original one they had taken immediately after graduation. About 90 per cent said that they were in a job which

used the training they had received at Oklahoma State Tech. However, about 30 per cent said that the training had not been sufficient for the type of work which they were in, and to further support this, about two-thirds said that the training should have been longer. Sixty-nine per cent said that they were satisfied with their jobs.

One-half of the graduates were employed as craftsmen, foremen, or kindred workers. Fifteen per cent were employed each in the categories of clerical and kindred workers and operatives and kindred workers. Before training of these graduates, there were only 7.4 per cent in the category of craftsmen, foremen, and kindred workers. Eleven per cent were operatives and kindred workers, and 5.3 per cent were clerical and kindred workers. It is evident that there was considerable upward occupational mobility into the occupations for which these people were being trained.

Men graduates received an average of $419.08 per month. Women graduates received only $251.56 per month. The average monthly pay per month for all graduates was $394.47. The average monthly salary for white graduates was $413.76, for Indian graduates it was $363.40, and for Negro graduates it was $254.00. Even with a certain amount of vocational or technical skills, there is still a considerable income differential between both the various races and sexes.

The average monthly salary for disabled Oklahoma-origin graduates was $429.43. For out-of-state disabled

graduates, it was $287.50. The average monthly salary for all disabled graduates was $397.89. The average monthly salary for non-disabled Oklahoma and out-of-state origin graduates was $393.79.

Graduates employed out-of-state received higher monthly incomes than those employed in the state of Oklahoma. In fact, there is about a ninety dollar differential. Employment in Oklahoma averaged $354.70 per month while out-of-state employment averaged $465.85. It was discussed previously that a higher per cent of graduates left Oklahoma for employment than originated from Oklahoma. No doubt much of the out-of-state migration was due to this higher income differential which existed for out-of-state employment.

The average monthly salary for different areas of training ranged from $175.00 for stenography to $750.00 for plumbing. Average monthly salaries for various other occupations were as follows: accounting and bookkeeping, $374.17; auto machinists, $455.00; auto mechanics, $390.83; culinary arts, $231.31; diesel mechanics, $501.31; drafting, $420.56; electrical maintenance, $480.83; industrial electronics, $461.67; keypunchers, $276.00; and refrigeration and air conditioning, $406.70. There seems to be some indication that the lower the income, the smaller number of people that were in that field of training. Possibly, many of the students are, therefore, entering the fields offering higher incomes.

Interest was by far the most important reason given by the graduates for their training in their particular fields. In fact, 88 per cent listed it as one of the reasons. The next highest response for why they were training in their particular fields was high pay. About 56 per cent listed it as one of the reasons. Working conditions were listed by 39 per cent. Aptitude received 36 per cent. Previous occupation was given by 28 per cent as one of the reasons. Interestingly, 24 per cent listed status and prestige as one of the reasons why they were in their particular field. Low status and prestige has usually been associated with vocational-technical education in the past. Possibly some improvement in the general picture of vocational-technical training and education is occurring.

On future job expectations, most graduates felt both before and after graduation that they would keep working for their first employer permanently. About 60 per cent indicated both before and after graduation that such chances were good or excellent. Eighty per cent felt that the chances were good or excellent that they would stay in the same type of work permanently. About 65 per cent felt that the chances of their moving into a better job with the same employer were good or excellent. Most of the graduates perceived a high amount of employer and occupational stability.

On the perceptions of job characteristics, there were no significant changes in the graduates' perceptions before

and after graduation on how important the following factors were: pay, steadiness of work, whether the work was interesting, use of training, chances of promotion, retirement, what fellow workers and supervisors were like, reputation of firm, and fringe benefits. However, on job variety there was some evidence to indicate that there were real differences between the pre-graduation and post-graduation perceptions toward job variety. Job variety seemed to be more important after graduation than before graduation.

Academic Characteristics of Oklahoma State Tech Students

Graduates had a grade-point average of 2.79 in shop subjects and a 2.69 grade-point average in related subjects for an overall grade-point average of 2.76 (4=A). Dropouts had a 2.17 shop grade-point average and a 1.75 grade-point average in related subjects for an overall grade-point average of 2.12.

With both the graduates and dropouts, whites had the highest grade-point averages. Indians had the second highest. Negroes had the lowest grade-point averages in all areas. The overall grade-point average for white graduates was 2.81, for Indian graduates it was 2.73, and for Negro graduates it was 2.28. The overall grade-point average for white dropouts was 2.14, for Indian dropouts it was 2.02, and for Negro dropouts it was 1.92.

Rural background graduates had a higher overall

grade-point average than urban background graduates. For the rural graduates it was 2.82, and for the urban graduates it was 2.72. However, for the dropouts the rural background students had a 2.11 overall grade-point average and the urban background students had a 2.13 overall grade-point average.

Oklahoma-origin disabled graduates and dropouts received lower grades than the school average. The grades for out-of-state disabled graduates and dropouts were also lower than the school average. That the grades for Oklahoma-origin disabled graduates were lower than the school average is interesting in light of the fact that the monthly income of Oklahoma-origin disabled graduates was higher than the average monthly income for all graduates.

Generally the level of education of the graduates was higher than that of the dropouts. About 19 per cent of the graduates had less than 12 years of education while about 35 per cent of the dropouts had less than 12 years of education. Two-thirds of the graduates and 56 per cent of the dropouts had a high school diploma. About 14 per cent of the graduates and 8 per cent of the dropouts had 1 to 3 years of college. There was one college graduate in each of the graduate and dropout categories.

For the graduates, there is some correlation between the level of education and grade-point averages. As the level of education goes up, the grade-point average is higher

for all categories. The only exception to this was for the one student who had completed college. The same trend applies, generally, to the dropouts.

The size of the high school senior class from which Okalhoma-origin graduates and dropouts graduated was analyzed. The size breakdown was less than 25, 25 to 49, 50 to 99, and 100 and over. It was found that somewhat similar distributions for each class size existed for the graduates and dropouts as existed for the 1962 first-time Oklahoma-origin freshmen and 1962 Oklahoma high school graduates. However, for the graduates relatively more of them are from smaller high schools than is the case with the state system of higher education in general. However, for the dropouts, there is some indication that there is a higher relative number from the 50 to 99 size group.

With the graduates there seems to be some correlation between the size of the senior class and the grade-point averages. The smaller the senior class, generally the grade-point average is higher. However, with the dropouts, somewhat the opposite situation exists. The larger the senior class, the more likely the grade-point average will be higher.

Only three high school "activities" or combinations of "activities" had any appreciable positive effect on the various grade-point averages of the graduates. They were distributive education, 4-H, and FFA and 4-H together. The

other activities seem to have had either no effect or a negative effect on the grade-point averages. Interestingly, the grade-point averages of those graduates who had no such activities were about the same as the grade-point averages for all students. Only two activities had any positive effect on the grade-point average for the dropouts. They were Trade and Industrial education and the combination of FFA and 4-H. The other activities either had no effect or a negative effect on the various grade-point averages. Those with no high school activities had higher grade-point averages than those for all dropouts. The only high school activity or combination of activities which had a positive effect on the grade-point averages of both the graduates and dropouts was the combination of FFA and 4-H. The one activity which would have been thought to have produced a positive effect on grade-point averages was Trade and Industrial education. However, there was a negative relationship between it and the grade-point averages for the graduates; and for the dropouts, it had only a slightly positive effect. The fact that those who had no high school activities fared as well or better on grade-point averages than the average for two groups is indicative that the value of high school activities was of doubtful importance in affecting post-high school scholastic achievement at Oklahoma State Tech.

In all grade-point categories, the graduates who took jobs in Oklahoma had higher grade-point averages than

those who took out-of-state employment. Graduates who had changed jobs from the one they had taken immediately after graduation had lower grade-point averages in all categories than those who were still with their same employer six months after graduation.

The educational attainment of parents has an effect on whether or not their children will seek higher education. The level of educational attainment of the mothers and fathers of the graduates was lower than that for the Oklahoma population over 25 years of age. Only 1.6 per cent of the graduates' parents were both college graduates. The average for the state system of higher education's students who had both parents with a college degree was 7.7 per cent. The per cent of graduates who had one parent with a college degree was 8.6 per cent, and for the state system of higher education, it was 17.5 per cent. Neither parent having a college degree made up 89.8 per cent of the graduates' parents, and for the state system of higher education, 74.8 per cent of the parents had no college education.

In looking at the level of education of the parents of students at each state institution of higher education, those parents who had the greatest amount of formal education tended to send their children to a university, while those parents with the least amount of education tended to send their children to Oklahoma State Tech or to junior colleges. There seems to be some effect of parental education not only

on whether or not their children seek higher education, but also on what type of institution and curriculum they choose to endeavor.

On all personal characteristics, such as personality, aptitude, initiative, dependability, judgment, attitude, co-operativeness, and quantity of work, the instructors at Oklahoma State Tech ranked the graduates higher than the dropouts. Graduates ranked considerably higher on the following five characteristics than the dropouts: aptitude, initiative, dependability, attitude, and quantity of work.

Recommendations

Only 6.1 per cent of the students in the Oklahoma state system of higher education were in vocational or technical education areas in 1966. To provide for the increased numbers of middle-manpower personnel which will be increasingly demanded by our technologically orientated economy, more emphasis should be placed on this phase of education. Associated with this problem, an attempt should be made to improve the general picture of vocational and technical occupations. Traditionally, our society has looked down upon people in such occupations and social strata, but some improvement is being evidenced.

Action should be taken to remedy the duplication of authority and supervision over post-secondary vocational, and technical education in Oklahoma. Either the Oklahoma State Regents for Higher Education or the Division of

Vocational Education of the State Department of Education should assume sole responsibility for this phase of our educational system.

Increased state appropriations should be made available to Oklahoma State Tech to alleviate the educational cost imbalances which exist for its students. Its students come from lower economic levels. Since per full-time-equivalent student costs are higher at Oklahoma State Tech, increased burdens are placed on these students.

Oklahoma State Tech is unique in that it does not require a high school diploma for admittance. This policy of allowing anyone over a certain minimum age admittance into this institution should be continued. Many older people who do not possess high school diplomas can, therefore, get education more readily.

If the drain on skilled manpower from Oklahoma is to be halted, additional employment opportunities have to be made available. A more than proportionate number of Oklahoma State Tech graduates are now going out-of-state for employment.

The value of high school activities seems somewhat dubious in its effect on post-secondary scholastic achievement. Possibly, attention should be given to re-evaluating the nature and purpose of such programs and activities.

The dropout rate at Oklahoma State Tech is very high. More money and effort should be made available to Oklahoma

State Tech so that it can devote more time to the marginal students in an attempt to upgrade them for productive lives. No longer is there any room in our complex technologically orientated society for the worker without any training or education.

Oklahoma State Tech students are predominantly males. New programs of instruction should be made available so that more women can be trained by the state for vocational and technical skills.

Even though all Oklahoma State Tech graduates considered in this study had certain minimum levels of skill achievement, an income differential still exists not only between sexes, but also between races. Whites made more than Indians, and Indians in turn made more than whites. Effort should be made to reduce these differentials.

Grade-point averages differed between the various races. Effort should be made to bring all up to the same level of educational attainment in all phases of the educational process.

APPENDIX A

The University of Oklahoma
Norman, Oklahoma, 73069

July 27, 1966

Dear Sir:

A group of people at the University of Oklahoma in cooperation with various state agencies are engaged in a study of post-secondary vocational-technical education in Oklahoma.

The purpose of this study is to evaluate the nature, role, and effectiveness of this type of education. Your cooperation is essential to the success of this study. Please complete this questionnaire and return it to us as soon as possible. The information gathered will remain strictly confidential and will be reported only in collective form. The information from any one individual will not be divulged in any manner to anyone.

Sincerely yours,

Gordon E. Von Stroh
Department of Economics
University of Oklahoma

Enclosure

QUESTIONNAIRE
for students graduating from
Oklahoma State Tech

1. Name_____

2. Sex: Male_____ Female_____

3. Race_____

4. Age_____

5. Marital Status: Single___ Married___ Separated___

   Widowed___ Divorced___

6. Home County_____

7. Present Address: Street or building_____

   Town_____

   State_____

8. The value of this study will depend upon knowing what your address is three months from now. For this purpose, please give us a permanent address where you could always be reached.

   Street_____

   Town_____

   State_____

9. What was the highest grade you completed in grade or high school? _____

10. If you dropped out of grade or high school, why did you?

    _____

    _____

    _____

11. What is (was) the occupation of your father?_____

12. What is (was) the occupation of your mother?_____

13. How many grades of school did your father complete?_____

14. How many grades of school did your mother complete?____

15. What is their present income?_____
(if divorced, indicate each separately)

16. If you dropped out of school, did you receive any advice from school when you dropped out? What kind?

_____

_____

17. If you have held full-time employment before entering Oklahoma State Tech, please fill out the following information; if you haven't, go to Question #18.

A.	Dates Held From	To	Name of Company and Location	My Duties Were	Monthly Pay
First Job					
Second Job					
Third Job					
Fourth Job					

B.

	How were each of the jobs obtained? (friends, relatives, employment offices, want ads, applying directly to company, and other methods)	Did you shop around or consider other jobs before taking this job?	
First Job		Yes_____	No_____
Second Job		Yes_____	No_____
Third Job		Yes_____	No_____
Fourth Job		Yes_____	No_____

C. What was the reason you left each job?

First Job_____

Second Job_____

Third Job_____

Fourth Job_____

(If more than four jobs were held, please list the same information as asked in A, B, and C on the reverse side for the additional jobs held.)

D. If you were unemployed before entering Oklahoma State Tech, how many months were you unemployed before starting school?_____

18. Have you attended any schools above the high school level besides Oklahoma State Tech? Yes____ No_____
(If answer is No, go on to Question #19)

A. What school or schools did you attend?_____

_____

B. How many years did you attend these schools?_____

C. Did you drop out of school? Yes____ No____

D. If you dropped out of school, what was your main reason for doing so?_____

_____

E. About what per cent of your school expenses at the above listed schools did you pay through your own earnings?_____

19. What is your area of training now at Oklahoma State Tech?_____

20. How are you financing your training here at Oklahoma State Tech?_____

_____

21. When you leave Oklahoma State Tech, which of the following will apply to you?

A. _____I already have a job lined up. (Check this only if you are sure you have a job)

B. _____I am looking for a job now or will be very soon.

C. _____I plan to take some time off and then look for work. (If you check this one, about how long will you wait before looking for work? _____ months.)

22. A lot of things are involved in any job. For each of the following, please check whether it is "very important," "fairly important," or "not important" to you in any job that you might have.

A. What the job pays (wage or salary)_____

B. How steady the employment is (few or no layoffs)__

_____

C. Whether it is interesting (type of work you like)

_____

D. Whether job makes use of your training_____

E. Working conditions (light, heat, ventilation, safety, and so forth)_____

F. Your chances of promotion (to a higher level of skill)_____

G. What the retirement or pension plan is like_____

_____

H. Whether job has variety (not monotonous)_____

I. What your fellow workers are like_____

J. What your immediate supervisors are like (those whom you will report directly to)_____

K. The reputation of the company as a place to work

_____

L. What other fringe benefits are like (health insurance, holidays, vacations, recreation facilities, and so forth)_____

23. Are you a member of a labor union? Yes_____ No_____

If you are, what trade is it?_____

24. If you have lined up a job, complete the following; if you haven't lined up a job, go to Question #25.

A. What is the job? (title or description)_____

B. Where will the job be? Company_____

City_____

State_____

C. How did you hear about this job? (Check one)

1. Through friends or relatives _____

2. Through State Employment Office _____

3. Through the department _____

4. Through seeing an ad in the paper _____

5. Just went out and applied _____

6 Other (specify) _____

D. Are you satisfied with this job you are going to take? Yes_____

No_____

Don't know_____

E. Is skill and is training for this job

Very important_____

Fairly important_____

Not important_____

F. Will this job coincide with the training you received here? Yes_____

No_____

G. As far as you are concerned, will your pay be

Excellent_____

Good_____

Fair_____

Poor_____

H. What is the monthly salary that you will receive at this job?_____

I. Will the working conditions be Excellent_____

Good_____

Fair_____

Poor_____

25. If you are looking or will look for a job, please complete the following; if you already have a job lined up go on to Question #26.

A. How are you going about looking for a job? (Check all that apply)

Using the school's Placement Bureau _____

Using the State Employment Service _____

Applying directly to a company (or companies) ____

Asking for help from instructors in the department_____

Reading the want ads _____

Expect help from friends and relatives _____

Other (specify) _____

B. Who do you expect to be of the greatest help in finding a new job? Please number in order of where you expect the greatest help--1 for greatest, 2 for next greatest, and so on.

School's Placement Bureau _____

Instructors in the department _____

Want ads _____

Friends and relatives _____

State Employment Service _____

Applying directly to the company _____

Other (specify) _____

C. Do you think that you will find a job that will make use of your training at Oklahoma State Tech?

No_____

Yes, in Oklahoma_____

Yes, but not in Oklahoma_____

D. Where are you predominantly looking for work? (or where will you look)

Hometown area_____

Okmulgee ares_____ (if hometown area is Okmulgee, then check only home-town area)

A metropolitan area (other than home-town)_____

Out of state_____ (if not from that state)

Other (specify)_____

E. If you had two jobs available in a field in which you have been trained, which would you do? (check one)

Stay in Oklahoma_____

Or move to another state for 50 cents more an hour_____

F. Where will you prefer working

In Oklahoma _____

Outside of Oklahoma _____

G. What are your chances of a job in the occupation in which you are being trained?

Excellent_____

Good_____

Fair_____

Poor_____

H. Where are your chances better for a job in which you are being trained?

In Oklahoma_____

Outside of Oklahoma_____

I. Do you plan to seek work outside of Oklahoma?

Yes_____

No_____

J. What is your best guess on how long it will be after graduation till you have found a job?

Less than 1 month _____

One to two months _____

Three to six months _____

Six months or longer _____

K. What do you expect to receive per month from your job?

Starting Salary	Salary after two years
Under $300_____	Under $300_____
$300 to 350_____	$300 to 350_____
$350 to 400_____	$350 to 400_____
$400 to 450_____	$400 to 450_____
$450 to 500_____	$450 to 500_____
$500 to 550_____	$500 to 550_____
$550 to 600_____	$550 to 600_____
Over $600_____	Over $600_____
If over $600, please specify_____	If over $600, please specify_____

26. Why are you training in your field of study? (Check which are applicable)

A. High pay_____

B. Interest in this field_____

C. Father's occupation_____

D. Previous background in this field_____

E. Friends also training in this field_____

F. Don't really know why_____

G. Working conditions_____

H. Status and prestige_____

I. Aptitude in this field_____

J. Other (specify) _____

27. Of the above listed items which one was the most important to you in making the decision to train in your field of study?_____

28. What do you think the chances are that: (categories are: excellent, good, fair, poor, and very poor)

A. You will keep working for your first employer after graduation permanently; if you will be self-employed, you will keep working for yourself:_____

B. You will stay in the "same type of work" you are training for:_____

C. You will move into a better job with the same employer than the first job you have with him:

_____

D. You will move into a better job, but with another employer:_____

E. You will move into another job at the same level with another employer:_____

29. What made you decide to come to Oklahoma State Tech: (Check ones applicable)

A. Close to home_____

B. Friends also going to same school_____

C. Cost less to go here_____

D. Reputation for the training desired_____

E. Other (specify)_____

30. So you plan to enter the Armed Forces soon after graduation from Oklahoma State Tech? Yes_____ No_____

If yes, will you try to seek an occupation in the service that will use your training that you have received here? Yes_____ No_____

APPENDIX B

The University of Oklahoma
Norman, Oklahoma, 73069

January 23, 1967

Dear Sir:

A group of people at the University of Oklahoma in cooperation with various state agencies are engaged in a study of vocational-technical education in Oklahoma.

On August 4, 1966, a questionnaire was given to you while you were still a student at Oklahoma State Tech. In order to successfully complete this study, a follow-up questionnaire is being sent for you to fill out. We would appreciate if you would fill it out as accurately as you can and return it to us as soon as possible in the enclosed self-addressed envelope. The information gathered will remain completely confidential. Your cooperation is very essential for the success of this study. We, therefore, will appreciate your assistance in filling out the questionnaire and returning it to us.

Sincerely yours,

Gordon E. Von Stroh
Researcher

Enclosure

(confidential information)

1. Name_____

2. Are you employed now: Yes____ No____

3. What is the job: (title or description)_____

4. Where is the job: Company_____

   City_____

   State_____

5. If you are employed, is it with the same firm that you started with after graduation from Oklahoma State Tech: Yes____ No____

6. If you did not have a job at graduation time, how long did it take to get a job:
   A. Less than one month____
   B. One to two months ____
   C. Three to six months____
   D. Still unemployed ____
   If you are still unemployed, could you tell us why
   _____
   _____ (use back if necessary)

7. If you are employed, are you in a job that makes use of your training: Yes____ No____

8. Has the training which you received at Oklahoma State Tech been sufficient for the type of work which you are in: Yes____ No____

9. Should it be longer: Yes____ No____

10. How could the training and education courses at Oklahoma State Tech be improved?_____
    _____
    _____ (use back if necessary)

11. Are you satisfied with your present job: Yes____ No____
    If not, why not_____
    _____
    _____ (use back if necessary)

12. What is your monthly salary on your job: _____
    Are you satisfied with this amount: Yes____ No____
    If not, why not_____
    _____

13. Do you plan to stay in Oklahoma permanently: Yes____ No____
(if you are not in Oklahoma now, do not answer)

14. A lot of things are important in any job. For each of the following, please check whether each is "very important" or "fairly important" or "not important" to you in the job that you have now or want to have:

	very important	fairly important	not very important
A. What the job pays	___	___	___
B. How steady the work is (few or no layoffs)	___	___	___
C. Whether it is interesting	___	___	___
D. If the job makes use of your training	___	___	___
E. Working conditions (light, heat, safety, and so forth)	___	___	___
F. Chances of promotion	___	___	___
G. What retirement or pension will be like	___	___	___
H. Whether job has variety (not monotonous)	___	___	___
I. What your fellow workers are like	___	___	___
J. What your supervisors are like on your job	___	___	___
K. The reputation of the firm	___	___	___
L. Fringe benefits (like holidays, vacations, insurance, and other extras)	___	___	___

15. What do you think the chances are that: (categories are: excellent, good, fair, poor, and very poor)
   A. You will keep working for the employer that you have now permanently_____
   (if self-employed, you will keep working for yourself)
   B. You will stay in the same type of work that you are now in_____
   C. You will move into a better job with the employer that you have now_____
   D. You will move into a better job, but with another employer_____
   E. You will move into another job at the same level with another employer_____

16. If you changed jobs, would it be for which one of the following reasons: (check only one reason)
    A. Higher salaries ___
    B. More desirable geographic location ___
    C. Better opportunities ___
    D. Make better use of your training ___
    E. More challenging work ___
    F. Other reasons (specify) ___

_____

_____

_____

THANK YOU

The University of Oklahoma

Norman, Oklahoma, 73069

February 17, 1967

Dear Sir:

If you remember, a questionnaire was given to you on August 4, 1966, while you were still at Oklahoma State Tech. This questionnaire was part of a study of vocational-technical education in Oklahoma. For us to complete this study, a follow-up questionnaire was sent to you and your fellow students several weeks ago. We did not receive yours back. We are sending you another copy of the questionnaire and we would appreciate it if you would fill it out and return it to us in the enclosed self-addressed envelope.

The information will remain completely confidential. Your cooperation is extremely essential to the success of this study. We will, therefore, appreciate your full assistance in filling out this questionnaire and returning it back to us.

Sincerely yours,

Gordon E. Von Stroh
Researcher

GVS:ej
Enclosure

APPENDIX C

DATA ON GRADUATES FROM OKLAHOMA STATE TECH
REGISTRAR'S OFFICE

NAME_____
(last) (first)

SPONSOR_____
(if supported by an agency)

PERSONAL CHARACTERISTICS (rating)

Personality_____

Ability to learn_____

Initiative_____

Dependability_____

Judgment_____

Attitude_____

Cooperativeness_____

Receptive to evaluation_____

Quantity of work_____

Quality of work_____

Supervision required_____

GRADE AVERAGES

Shop subjects_____

Related subjects_____

Overall average_____

BACKGROUND Rural____ Urban____

HIGH SCHOOL_____
(name) (city) (state)

HIGH SCHOOL ACTIVITIES FFA___ DO___ DE___ T & I___ 4-H___

CHURCH_____

APPENDIX D

DATA ON DROPOUTS FROM OKLAHOMA STATE TECH
REGISTRAR'S OFFICE

1. 4 (Deck Number)

2. _____

3. _____

4. _____ (Name By Code)

5. _____ (Sponsor)
1--16
2--Regular
3--Oklahoma Rehabilitation
4--Out-of-State Rehabilitation
5--634 & 88-361
6--959
7--894 & 87-815
8--Navajo
9--89-358

6. _____
(1-77 is county; 78-99 is state)

7. _____ (County or State)

8. _____

9. _____ (Area of Training)

10. _____ (Size of High School)

11. _____

12. _____ (Highest grade; 99 is 0)

13. _____ (Rural is 1, City is 2)

14. _____ (Male is 1, Female is 2)

15. _____ (Race; Indian is 1, Negro is 2, White is 3, Other is 4)

16. _____

17. _____ (Age)

18. _____ (Marital Status; Single is 1, Married is 2, Separated is 3, Widowed is 4, Divorced is 5)

19. _____ (H.S. Activities; FFA is 1, DO is 2, DE is 3, T & I is 4, 4-H is 5)

20. _____

21. _____ (Parent's Occupation)

22. _____

23. _____ (Student's previous occupation)

24. _____ (Why Dropped Out?)
0--is unknown reason
1--is got job
2--is medical reasons
3--is lack of interest
4--is lack of ability
5--school curriculum
6--family responsibilities
7--financial reasons
8--other
9--is all other

25. _____ (Previously enrolled at OST; Yes is 1, No is 2)

26. _____ (Number of tri-semesters at OST; 0, 1, 2, and so forth)

27. _____ (Number of interruptions; 0, 1, 2, and so forth)

28. _____ (Completed tri-semester; Yes is 1, No is 2)

29. _____

30. _____ (Shop Average)

31. _____

32. _____ (Related Average)

33. _____

34. _____ (Overall Average)

35. _____

36. _____ (Personality)

37. _____

38. _____ (Ability to learn)

39. _____

40. _____ (Initiative)

41. _____

42. _____ (Dependability)

43. _____

44. _____ (Judgment)

45. _____

46. _____ (Attitude)

47. _____

48. _____ (Cooperativeness)

49. _____

50. _____ (Receptive to Evaluation)

51. _____

52. _____ (Quantity of work)

53. _____

54. _____ (Quality of work)

55. _____

56. _____ (Supervision required)

57. _____

58. _____ (Church)

****

Key

0, 00, 000, 0000 is NO DATA

9, 99, 999, 9999 is NOT APPLICABLE, UNLESS OTHERWISE STATED

APPENDIX E

KEY TO WORKSHEETS

0, 00, 000, 0000 - No Response
9, 99, 999, 9999 - Not applicable unless otherwise noted

1. Deck Number 1

2., 3., and 4. Name by code
1--210 for graduates

5. Sex, male is 1, female is 2

6. Race, Indian is 1, Negro is 2, White is 3, other is 4

7. and 8. Age (At matriculation)

9. Married status, single is 1, married is 2, separated is 3, widowed is 4, divorced is 5

10. and 11. County or State

01--Adair
02--Alfalfa
03--Atoka
04--Beaver
05--Beckham
06--Blaine
07--Bryan
08--Caddo
09--Canadian
10--Carter
11--Cherokee
12--Choctaw
13--Cimarron
14--Cleveland
15--Coal
16--Comanche
17--Cotton
18--Craig
19--Creek
20--Custer
21--Delaware
22--Dewey
23--Ellis
24--Garfield
25--Garvin
26--Grady
27--Grant
28--Greer
29--Harmon
30--Harper
31--Haskell
32--Hughes
33--Jackson
34--Jefferson
35--Johnston
36--Kay
37--Kingfisher
38--Kiowa
39--Latimer
40--LeFlore
41--Lincoln
42--Logan
43--Love
44--Major
45--Marshall
46--Mayes
47--McClain
48--McCurtain
49--McIntosh
50--Murray
51--Muskogee
52--Noble
53--Nowata
54--Okfuskee
55--Oklahoma
56--Okmulgee
57--Osage
58--Ottawa
59--Pawnee
60--Payne
61--Pittsburg
62--Pontotoc
63--Pottawatomie
64--Pushmataha
65--Roger Mills
66--Rogers
67--Seminole
68--Sequoyah
69--Stephens
70--Texas
71--Tillman
72--Tulsa
73--Wagoner
74--Washington
75--Washita
76--Woods
77--Woodward
78--Arizona
79--Arkansas
80--Colorado
81--Illinois
82--Indiana
83--Iowa
84--Kansas
85--Missouri
86--New Mexico
87--Ohio
88--South Dakota
89--Texas
90--Tennessee

91--Georgia	94--Mississippi	97--Foreign Countries
92--Maine	95--California	98--Florida
93--Idaho	96--Louisiana	99--is for army or not applicable (as might be the case with unemployed on followup)

12. and 13. Highest grade completed 00--99

14. and 15. *Why dropped out of high school*
01--disagreements with parents
02--illness
03--financial
04--
05--
06--
07--
08--
09--
10--
11--
12--
13--joined military
99--is not applicable - not dropout

16. and 17. Occupations of father
1--professional, technical and kindred workers
2--managers, officials, and proprietors, except farm
3--clerical and kindred workers
4--sales workers
5--craftsmen, foremen, and kindred workers
6--operatives, and kindred workers
7--laborers, except farm and mine
8--private household workers
9--service workers, except private household
10--farmers and farm managers
11--farm laborers and foremen
12--military
13--disabled, retired, deceased
14--had no occupation
15--in school or college
16--housewife
99--unemployed (had been employed)

18. and 19. Occupations of mother -- see 16 and 17

20. and 21. Highest grade by father
99--not applicable--dead
therefore 1-20
0 grade is 98

22. and 23. See above - mother's highest grade

24.--27. Monthly income of parents (in dollars)

28. and 29. Student's employment before OST - see occupations under 16 and 17

30. and 32. Student's monthly income before OST (in dollars)

33. and 34. Area of training

01--accounting and bookkeeping
02--appliance repair
03--auto body
04--auto machinist
05--auto mechanics
06--auto parts
07--auto service station operator
08--auto service management
09--auto trim
10--baking
11--building construction
12--cake decorating
13--commercial art
14--culinary arts
15--diesel mechanics
16--drafting
17--dry cleaning
18--electrical - IM & EM
19--electronic data processing
20--farm machinery and tractor repair
21--furniture upholstery
22--general business
23--industrial electronics
24--keypunch
25--leathercraft
26--letterpress
27--lithography
28--plumbing
29--refrigeration & air conditioning
30--secretarial
31--shoe repair
32--small gasoline engines
33--stenography
34--teletypesetter
35--television electronics
36--watchmaker

35. and 36. How financing training

00--T & I
01--MDTA training
02--Regular training
03--Oklahoma rehabilitation
04--Out-of-state rehabilitation
05--634 and 88-361
06--959
07--894 and 87-815
08--Navajo tribe
09--89-358
11--part-time work on campus
12--parent's paying all
13--by loan
14--scholarship
15--part-time work on campus and parents
16--savings, parents, and part-time work
17--loan, and part-time job
18--scholarship and loan
19--parents and government support
20--savings
21--savings and part-time work
22--parents and loan
23--scholarships and work
24--spouse working
25--government and part-time
26--Indian tribe
27--scholarships and parents

37. Job Prospects
1--have job at graduation
2--looking for job at graduation time
3--take time off and then look

38.--49. Important things on any job
1--very important
2--fairly important
3--is not important

50. Member of a union
1--yes
2--no

51. Method of getting job
1--friends or relatives
2--State Employment Service
3--instructors and department
4--reading want ads
5--just went out and applied
6--other

52. Length of training at OST
1--4
2--8
3--12
4--16
5--20
6--24

53. Number of interruptions of training at OST
0--is 0 interruptions
1--is 1 interruption (but finished tri-semester)
2--is 2 interruptions (but finished tri-semester)
3--is one interruption, it being during tri-semester.

54. 0--first and second questionnaire not received
1--first, but not second received
2--second received but not first
3--first and second received
4--first and school's received
5--original received with followup
6--school's questionnaire is only one received

55. Satisfied with job
1--yes
2--no
3--don't know
9--NA (no job)

56. Skill and training important
    1--very important
    2--fairly important
    3--is not important
    9--NA (no job)

57. Will job coincide with OST training
    1--yes
    2--no
    9--NA (no job)

58. Will pay be
    1--excellent
    2--good
    3--fair
    4--poor

59.-61. Monthly pay on job (in dollars)

62. Working conditions
    1--excellent
    2--good
    3--fair
    4--poor

63. Open column
    Was coded as 9

64. State Employment Service
    1--will be used
    2--will not be used

65. Applying directly to company
    1--yes
    2--no

66. Help from instructors
    1--yes
    2--no

67. Reading want ads
    1--yes
    2--no

68. Help from friends and relatives
    1--yes
    2--no

69. Other
    1--yes
    2--no

70. Open column
Coded as 9

71. Importance of instructors in getting job
Relative importance ranked 1 thru 6

72. Importance of want ads in getting job
Relative importance ranked 1 thru 6

73. Importance of friends and relatives
Relative importance ranked 1 thru 6

74. Importance of State Employment Service in getting job
Relative importance ranked 1 thru 6

75. Importance of applying directly to the firm
Relative importance ranked 1 thru 6

76. Importance of other methods in getting job
Relative importance ranked 1 thru 6

77. Will you find a job using OST training
1--no
2--yes, in Oklahoma
3--yes, but in another state

78. Where are you looking for work
1--hometown area
2--Okmulgee area
3--metropolitan area
4--out of state
5--other

79. If two jobs which would you do
1--stay in Oklahoma
2--move for 50 cents to another state

80. Where will you prefer working
1--in Oklahoma
2--outside of Oklahoma

1. Deck number 2

2., 3., and 4. are name by code

5. What are chances for work
   1--excellent
   2--good
   3--fair
   4--poor

6. Where are chances better for work
   1--in Oklahoma
   2--outside of Oklahoma

7. Do you plan to see work outside of Oklahoma
   1--yes
   2--no

8. How long will it be before job begins
   1--less than one month
   2--two to three months
   3--three to six months
   4--six months or longer

9. Starting salary
   1--under $300
   2--$300 to $350
   3--$350 to $400
   4--$400 to $450
   5--$450 to $500
   6--$500 to $550
   7--$550 to $600
   8--Over $600

10. Salary after two years
    1--under $300
    2--$300 to $350
    3--$350 to $400
    4--$400 to $450
    5--$450 to $500
    6--$500 to $550
    7--$550 to $600
    8--Over $600

11. High pay
    1--yes
    2--no

12. Interest in field
    1--yes
    2--no

13. Father's occupation
    1--yes
    2--no

14. Previous background
    1--yes
    2--no

15. Friends also here
    1--yes
    2--no

16. Don't know why
    1--yes
    2--no

17. Working conditions
    1--yes
    2--no

18. Status and prestige
    1--yes
    2--no

19. Aptitude in this field
    1--yes
    2--no

20. Other
    1--yes
    2--no

21. Which is most important
    1--high pay
    2--interest in field
    3--father's occupation
    4--previous background
    5--friends also here
    6--don't know why
    7--working conditions
    8--status and prestige
    9--aptitude

22. Chances to keep job
    1--excellent
    2--good
    3--fair
    4--poor
    5--very poor

23. Chances to stay in area of training
    1--excellent
    2--good
    3--fair
    4--poor
    5--very poor

24. Chances for better position
    1--excellent
    2--good
    3--fair
    4--poor
    5--very poor

25. Chances with another firm
    1--excellent
    2--good
    3--fair
    4--poor
    5--very poor

26. Chances--same level, outside
    1--excellent
    2--good
    3--fair
    4--poor
    5--very poor

27. Decided--close to home
    1--yes
    2--no

28. Friends also going to OST
    1--yes
    2--no

29. Cost less to go here
    1--yes
    2--no

30. Reputation for training
    1--yes
    2--no

31. Other reason for attending OST
    1--yes
    2--no

32. Do you plan to enter the service
    1--yes
    2--no

33. If yes, will you seek selection
    1--yes
    2--no

34.-35. Shop average
    4.0--excellent
    3.0--good
    2.0--fair
    1.0--poor
    0.0--unsatisfactory

36.-37. Related average
    00--40 is range

38.-39. Overall average
    00-40 is range

40.-41. Personality
    00-40 is range

42.-43. Ability to learn
    00-40 is range

44.-45. Initiative
    00-40 is range

46.-47. Dependability
    00-40 is range

48.-49. Judgment
    00-40 is range

50.-51. Interest in work
    00-40 is range

52.-53. Cooperativeness
    00-40 is range

54.-55. Receptive to evaluation
    00-40 is range

56.-57. Quantity of work
    00-40 is range

58.-59. Quality of work
    00-40 is range

60.-61. Supervision
    00-40 is range

62. Sponsor

1--MDTA	6--959
2--regular	7--894 & 87-815
3--Oklahoma Rehabilitation	8--Navajo
4--out of state rehabilitation	9--89-358
5--634 & 88-361	0--T & I

This is from the data from registrar's office

63. 1--rural
2--city

64. High school size
1--less than 25
2--25-49
3--50-99
4--100 or more students
5--out-of-state high school where student graduated
This is based on ASR---65-66

65. High School activities

1--FFA	6--none of these
2--DO	7--4-H and FFA
3--DE	8--FFA and T & I
4--T & I	9--FFA, DO, DE, and T & I
5--4-H	

66.-67. Church

01--Assembly of God	14--RLDS
02--Baptist	15--Pentacostal
03--Church of Christ	16--Church of God
04--Christian	17--Christian Science
05--Episcopal	18--Buddha
06--Free Will Baptist	19--Pentacostal Holiness
07--Lutheran	20--Full Gospel
08--Methodist	21--Mennonite
09--Nazarene	22--Unitarian
10--Presbyterian	23--First Born
11--Roman Catholic	24--Church of Living God
12--Protestant	25--Moslem
13--"Other"	26--Hindu

68., 69., and 70. All open and coded as 9 for each

71. Are you employed now
1--yes
2--no

72. and 73. Occupation, see column 16 and 17 of deck 1 for the code to this.

74. and 75. Location, see columns 10 and 11 of deck 1 for the code for this.

76. If job with same firm
    1--yes
    2--no

77. How long to get job
    1--less than one month
    2--one to two months
    3--three to six months
    4--still unemployed

78. Does job use training
    1--yes
    2--no

79. Is training sufficient
    1--yes
    2--no

80. Should it be longer
    1--yes
    2--no

1. Deck number 3

2., 3., and 4. Name by code, 001 to 210

5. Improvement in courses at OST
   1--more related courses
   2--better and more highly trained instructors
   3--better facilities and equipment
   4--closer contact with students with more supervision and individual instruction
   5--upgrading the difficulty and level of instruction
   6--no improvements
   7--more on the job experience
   8--improvement of placements
   9--more testing and guidance in area of training

6. Are you satisfied with your job
   1--yes
   2--no

7. Why not satisfied
   9--okay with job

   1--wants to use training
   2--wants more challenging work
   3--work is too monotonous
   4--wants more responsibility
   5--wants advancement possibilities
   6--salary is not enough

8., 9., and 10. Monthly salary (in dollars)

11. Are you satisfied with this
   1--yes
   2--no

12. Do you plan to stay in Oklahoma
   1--yes
   2--no

13. Is what job pays
   1--very important
   2--fairly important
   3--not very important

14. How steady the work is
   1--very important
   2--fairly important
   3--not very important

15. Whether job is interesting
    1--very important
    2--fairly important
    3--not very important

16. If the job makes use of training
    1--very important
    2--fairly important
    3--not very important

17. Working conditions
    1--very important
    2--fairly important
    3--not very important

18. Chances of promotion
    1--very important
    2--fairly important
    3--not very important

19. What retirement or pension is like
    1--very important
    2--fairly important
    3--not very important

20. Whether job has variety
    1--very important
    2--fairly important
    3--not very important

21. What fellow workers are like
    1--very important
    2--fairly important
    3--not very important

22. What supervisors are like
    1--very important
    2--fairly important
    3--not very important

23. Reputation of the firm to work
    1--very important
    2--fairly important
    3--not very important

24. Fringe benefits
    1--very important
    2--fairly important
    3--not very important

25. "Keep working for present employer permanently"
    1--excellent
    2--good
    3--fair
    4--poor
    5--very poor

26. "Chances that you will stay in same type of work"
    1--excellent
    2--good
    3--fair
    4--poor
    5--very poor

27. "Chances you will move into a better job with the same firm"
    1--excellent
    2--good
    3--fair
    4--poor
    5--very poor

28. "Chances you will move into a better job with another firm"
    1--excellent
    2--good
    3--fair
    4--poor
    5--very poor

29. "Chances you will move into another job at the same level"
    1--excellent
    2--good
    3--fair
    4--poor
    5--very poor

30. "If you changed jobs, would it be for which"
    1--higher salaries
    2--more desirable geographic location
    3--better opportunities
    4--make better use of your training
    5--more challenging work
    6--other reasons
    7--don't like the vocation

1. Deck number 4--these are the dropouts; the decks 1-3 were graduates

2., 3., and 4. Name by code, for the dropouts--301 to 523

5. Sponsor

0--T & I	5--634 & 88-361
1--MDTA	6--959
2--regular	7--894 & 87-815
3--Oklahoma rehabilitation	8--Navajo
4--out-of-state rehabilitation	9--89-358 (GI)

6. and 7. County and state (see 10 and 11 of deck 1)

8. and 9. Area of training (see 33 and 34 of deck 1)

10. Size of high school
1--less than 25
2--25-49
3--50-99
4--100 or more students
5--out-of-state high school

11. and 12. Highest grade of dropout (in number of years)

13. Rural or city
1--rural
2--city

14. Sex
1--male
2--female

15. Race
1--Indian
2--Negro
3--White
4--Other

16. and 17. Age
01-98

18. Marital status
1--single
2--married
3--separated
4--widowed
5--divorced

19. High school activities
    1--FFA
    2--DO
    3--DE
    4--T & I
    5--4-H
    6--none of these
    7--4-H and FFA
    8--FFA and T & I
    9--FFA, DO, DE, and T & I

20. and 21. Father's occupation (see deck 1, #16 and 17)

22. and 23. Student's previous occupation (see deck 1, #16 and 17)

24. Why dropped out
    0--unknown
    1--got job
    2--medical reasons
    3--lack of interest
    4--lack of ability
    5--request of school
    6--joined military
    7--financial reasons
    8--completed the amount of course he wanted
    9--all other

25. Previously enrolled at OST
    1--yes
    2--no

26. Number of tri-semesters at OST
    1--1
    2--2
    3--3
    4--4
    5--5
    6--6
    7--7
    8--8

27. Number of interruptions
    1--1
    2--2
    3--3
    (This does not include his withdrawal during the August tri-semester or failing to return to winter tri-semester)

28. Completed tri-semester
    1--yes
    2--no

29. and 30. Shop average
    0.0--unsatisfactory
    1.0--poor
    2.0--fair
    3.0--good
    4.0--excellent

31. and 32. Related average
    00-40 range

33. and 34. Overall average
    00-40 range

35. and 36. Personality
00-40 range

37. and 38. Ability to learn
00-40 range

39. and 40. Initiative
00-40 range

41. and 42. Dependability
00-40 range

43. and 44. Judgment
00-40 range

45. and 46. Interest in work
00-40 range

47. and 48. Cooperativeness
00-40 range

49. and 50. Receptive to evaluation
00-40 range

51. and 52. Quantity of work
00-40 range

53. and 54. Quality of work
00-40 range

55. and 56. Supervision required
00-40 range

57. and 58. Church (see 66 and 67 of deck 2)

GRADUATES--FIRST QUESTIONNAIRE--PAGE ONE

1. 1 (Deck Number)

2.

3.

4. (Name by code)

5. (Sex: Male is 1, Female is 2)

6. (Race: Indian is 1, Negro is 2, White is 3, Other is 4)

7.

8. (Age)

9. (Marital Status: Single is 1, Married is 2, Separated is 3, Widowed is 4, Divorced is 5)

10.

11. (County or State)

12.

13. (Highest grade completed)

14.

15. (Why dropped out)

16.

17. (Occupation of father)

18.

19. (Occupation of mother)

20.

21. (Highest grade by father)

22.

23. (Highest grade by mother)

24.

25.____

26.____

___27.____ (Monthly income of parents)

START OF PAGE TWO OF FIRST QUESTIONNAIRE

28.____

___29.____ (Employment before OST training)

30.____

31.____

___32.____ (Their monthly pay before OST)

33.____

___34.____ (Area of training at OST)

35.____

___36.____ (How financing training)

START OF PAGE THREE OF FIRST QUESTIONNAIRE

___37.____ (Job prospects)

___38.____ (What job pays)

___39.____ (How steady employment is)

___40.____ (Whether it is interesting)

___41.____ (Whether job makes use of OST)

___42.____ (Working Conditions)

___43.____ (Chances of promotion)

___44.____ (What retirement or pension is)

___45.____ (Whether job has variety)

___46.____ (What fellow workers are like)

___47.____ (What supervisors are like)

___48.____ (Reputation of Company)

49.____ (What fringe benefits are like)

50.____ (Member of a union)

THOSE WHO HAVE JOBS AT GRADUATION TIME

51.____ (Method of getting job)

END OF PAGE THREE OF FIRST QUESTIONNAIRE

52.____ (Open)

53.____ (Open)

54.____ (Open)

START OF PAGE FOUR OF FIRST QUESTIONNAIRE

55.____ (Satisfied with job)

56.____ (Is skill and training import)

57.____ (Will job coincide with OST ed)

58.____ (Will your pay be)

59.____

60.____

61.____ (Monthly pay on job will be)

62.____ (Working conditions are)

THOSE LOOKING FOR JOBS AT GRADUATION TIME

63.____ (Open)

64.____ (State Employment Service)

65.____ (Applying directly to company)

66.____ (Help from instructors in dept)

67.____ (Reading want ads)

68.____ (Help from friends and relatives)

69.____ (Other)

70.____ (Open)

71.____ (Instructors)

72.____ (Want ads)

73.____ (Friends and relatives)

74.____ (State Employment Service)

75.____ (Applying directly to the firm)

76.____ (Others)

START OF PAGE FIVE OF FIRST QUESTIONNAIRE

77.____ (Will you find a job to use OST)

78.____ (Where are you looking for work)

79.____ (If two jobs which would you)

80.____ (Where will you prefer working)

1. 2 (Deck Number)

2.

3.

4. (Name by code)

5. (What are the chances for work)

6. (Where are chances better)

7. (Do you plan to seek work)

8. (How long will it before job)

PAGE SIX OF THE FIRST QUESTIONNAIRE

9. (Starting salary)

10. (Salary after two years)

APPLICABLE FOR ALL GRADUATES

11. (High pay)

12. (Interest in the field)

13. (Father's occupation)

14. (Previous background)

15. (Friends also here)

16. (Don't know why)

17. (Working Conditions)

18. (Status and prestige)

19. (Aptitude in this field)

20. (Other)

21. (Which is most important)

22. (Chances: (A)-keep job)

23. (Chances: (B)-stay in training)

24. (Chances: (C)-better position)

25. ____ (Chances: (D)-with another firm)

26. ____ (Chances: (E)-same level, outside)

27. ____ (Decide--Close to home)

28. ____ (Friends also going to OST)

29. ____ (Cost less to go here)

30. ____ (Reputation for training)

31. ____ (Other)

32. ____ (Do you plan to enter service)

33. ____ (If yes, will you seek selection)

FROM WORKSHEET

34. ____

35. ____ (Shop Average)

36. ____

37. ____ (Related Average)

38. ____

39. ____ (Overall Average)

40. ____

41. ____ (Personality)

42. ____

43. ____ (Ability to learn)

44. ____

45. ____ (Initiative)

46. ____

47. ____ (Dependability)

48. ____

49. ____ (Judgment)

50.____

51.____ (Interest in work)

52.____

53.____ (Cooperativeness)

54.____

55.____ (Receptive to Evaluation)

56.____

57.____ (Quantity of work)

58.____

59.____ (Quality of work)

60.____

61.____ (Supervision required)

62.____ (Sponsor)

63.____ (Rural is 1, City is 2)

64.____ (High School Size)

65.____ (High School Activities)

66.____

67.____ (Church)

68.____

69.____

70.____

FOLLOW-UP QUESTIONNAIRE

71.____ (Are you employed now)

72.____

73.____ (Occupation)

74.____

75.____ (County or State)

76.____ (Is job with first firm)

77.____ (How long to get job)

78.____ (Does job use training)

79.____ (Has training been sufficient)

80.____ (Should it be longer)

1. 3 (Deck Number)

2.

3.

4. (Name by Code)

5. (Improvement of courses at OST)

6. (Are you satisfied with job)

7. (Why not)

8.

9.

10. (Salary per month)

11. (Are you satisfied with this)

12. (Do you plan to stay in Oklahoma)

SECOND PAGE OF FOLLOW-UP QUESTIONNAIRE

13. (What job pays)

14. (How steady the work is)

15. (Whether it is interesting)

16. (If the job makes use of training)

17. (Working conditions)

18. (Chance of promotions)

19. (What retirement or pension is like)

20. (Whether job has variety)

21. (What fellow workers are like)

22. (What supervisors are like)

23. (Reputation of the firm to work)

24. (Fringe benefits)

25. (Chances: keep working for present employer permanently)

___26.____ (Chances: that you will stay in same type of work you are now in)

___27.____ (Chances: you will move into a better job with same firm)

___28.____ (Chances: you will move into another job at the same level)

___29.____ (Chances: you will move into another job at the same level)

___30.____ (If you changed jobs, would it be for which)

APPENDIX F

INSTITUTIONS

Universities

University of Oklahoma	Norman, Oklahoma
Oklahoma State University	Stillwater, Oklahoma

Senior Colleges

Central State College	Edmond, Oklahoma
East Central State College	Ada, Oklahoma
Northeastern State College	Tahlequah, Oklahoma
Northwestern State College	Alva, Oklahoma
Southeastern State College	Durant, Oklahoma
Southwestern State College	Weatherford, Oklahoma
Oklahoma College of Liberal Arts	Chickasha, Oklahoma
Panhandle A & M College	Goodwell, Oklahoma
Langston University	Langston, Oklahoma

Two-Year Colleges

Cameron State Agricultural College	Lawton, Oklahoma
Connors State Agricultural College	Warner, Oklahoma
Eastern Oklahoma A & M College	Wilburton, Oklahoma
Murray State Agricultural College	Tishomingo, Oklahoma
Northeastern Oklahoma A & M College	Miama, Oklahoma
Northern Oklahoma College	Tonkawa, Oklahoma
Oklahoma Military Academy	Claremore, Oklahoma

Vocational-Technical School

Oklahoma State Tech	Okmulgee, Oklahoma

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